

THE
SOUTHERN AGRICULTURIST.

AUGUST, 1831.

PART I.

ORIGINAL CORRESPONDENCE.

ART. I.—*On the Necessity of acquiring a Knowledge of Agriculture; by N. HERBEMONT.*

“Columbia, S. C. May 16, 1831.

Dear Sir,—I was surprised and very sorry to learn by the last number of the Southern Agriculturist, that you had received only two original communications during the last month. It is to be hoped that your appeal to our agricultural community will have the desired effect of rousing the apathy that seems almost to have obliterated our feeling of interest in so essential a profession as that of agriculture, in a country that is, and must always be almost exclusively devoted to it. It is not, as you observe, that we are so highly improved in the art and science of husbandry, that it would be a work of supererogation in the intelligent and patriotic cultivator to give precepts or advice to his brethren of the craft. Neither is there a scarcity of subjects on which he may exercise his pen with some prospect of advantage. That the number of your subscribers is very respectable, shows that there is a disposition to read enough on this most interesting subject. I feel within myself one of the causes which probably deters many from writing, and that is a reluctance to offer to the public eye observations that have been made many times before, and what is particularly my case, the fear lest the readers of your

journal may be tired of seeing too often a signature at the bottom of pieces that have apparently done no good.

We cannot doubt the existence of an imperious necessity of something being done to excite in our community, by any proper means, a disposition to improve their agriculture, and thereby *save their country*. For it is equally true of communities as it is of individuals, that to insure success, a close and wise attention to their own proper business is a *sine qua non*. And for the want of which, either are usually ruined. There is in this, it must be allowed, a considerable difficulty, not, however, harder to overcome, than it is very greatly needed. Does not experience, in fact, show that the less knowledge man possesses, the less he can appreciate its worth, and that he only who has made some advances in the sciences, is aware of how much he has to learn, and how deeply the world is yet in ignorance, particularly in regard to natural sciences? These form so extended a field for study, the more one advances, the more his horizon seems distant: whereas to the very ignorant man, this field has no existence, and he thinks he knows, of these matters, at least as much as any other person. This appears, then, the reason of the difficulty, I beg not to be understood to mean that we have not among us many persons who form honourable exceptions. As a class of agricultors, I do not believe there is any where any men superior and but few equal to the low country planters, with whom may be associated a few of the middle and upper country. The culture of rice, particularly, has been carried to a degree of perfection to which few, if any object of field culture has attained. Yet, I would ask of the most enlightened men among the rice planters, whether they are not satisfied that they have yet much to learn before they can be thoroughly acquainted with nature's modes of acting and the best methods of seconding, and even enhancing her efforts. They will, I am satisfied, admit that they yet need much experience, and that this can only be obtained by profound and scientific researches. They have, however, reached so high an eminence that they need further instruction, much less than the great farmers and cultivators of the soil all over the world, and, I am sorry to say it, principally in the Southern States.

"Knowledge is power." A country, therefore, with a thin population is far more in need of this power than those countries where the mere brute force is almost adequate to all its purposes. The promotion of knowledge is the acquiring of wealth, and these two combined form the strongest rampart to fortify the liberty, independence and prosperity of any country. A practical, scientific agricultor will obtain hundreds from the soil, taking every thing into consideration, for every unit which the ignorant man, by dint of hard labour, can extract from it. The Southern States are almost exclusively agricultural; for their commerce is in the hands of strangers; it is, therefore, their most imperious duty to themselves, under the penalty of something very near destruction, to acquire agricultural knowledge. But, how is this to be done? Do not our farmers seem equally averse with others to promote this, their individual, great and invaluable benefit, and, *ex facto*, the safety of their country. Is not this undeniably proven by this, that the repeated efforts of enlightened members of our legislature to obtain something like this object, has been invariably treated with neglect? Alas, this is but too true! Are we then to be vanquished by our difficulties? Are we to submit to a degradation little short of slavery, as to the unerring decrees of fate? Shall we not rather, like Antæus, acquire strength from our prostration and rise with the determination to retain that strength in our limbs and render it permanent there? Let us all, disregarding the difference of our views in politics, (the angry dissensions of which serve only to alienate us more and more from our natural friends and neighbours;) join, heart and soul, in the production of that most desirable of all acquisitions—knowledge, but principally that which belongs to the art which we are unavoidably to exercise.

From the observations made above, it seems vain to expect of men in a state of comparative ignorance, that they will establish the means of overcoming it. It must, therefore, be the business of those who are now, or who may become by reflection, enlightened on the subject, to commence, with all the patriotic zeal they are susceptible of, and lay the foundation stone of the structure which may be in future their impregnable fortress. Out upon the nonsense (in this case) of the maxim "let us alone." The Indians of this continent and the savages of Africa have tried

its efficacy long enough to prove its utter nothingness as a rule of conduct in forming the primary establishments of society for the promotion of that knowledge which is to raise them in the scale of intellectual beings. Society in a state of infancy or a child in the ordinary course of things must be taught that which is to form his future occupation through life. I entreat that no offence may be taken; for, most assuredly no offence is intended, when I say, that, as to the means of instruction in the almost exclusive professional pursuit of this country, we are very certainly in a state of infancy; for we have not, in the whole State, a single establishment formed for this express view, where the very A. B. C. of agriculture, as a science or as an art, is to be learned. This is a most anomolous state of things, incredible, but for its forcing itself constantly to our view! Would it not be thought a most unheard of dereliction of common sense that a boy brought up for a shoe-maker, should be taught only the properties of minerals and vegetables, the uses of letters and numbers, &c. &c. but not a word as to leather or the best way of shaping it into a shoe! Is it wonderful, then, that many of our citizens are moving away? For want of using the proper means to ensure their prosperity, they become disgusted with the futility of their labours, lay the blame on an innocent cause, and remove to a distant country, where the probability is that they will not succeed much better. Their native state, in the mean time, becomes depopulated. The richer lands of the West, if they be really richer, would not attract a farmer who had, by his wisely directed industry, rendered his farm, not only an abundant source of independence and comfort to him and his; but also, by the easy embellishments produced by taste and knowledge, a paradise, or at least a very pleasant and agreeable residence. He would not continue to sweat and dig for always increasing mountains of *cotton, cotton, cotton*, which does not pay him for his labour, when his neighbours as well as himself are in want of corn, meat, horses, mules, and even hay, all of which they are compelled to procure from distant countries, when his farm could produce them in abundance and perfection. It may be said as an excuse, and it has some force, that it is very difficult, in a country organized as this is, to change the object of one's culture. It is not intended here to recommend the abandonment of the culture of

cotton; but only that, as it commands so small a price, to diminish the quantity raised and substitute other things to the quantity that is given up. Many, very many, are the objects which may be thus made to replace the diminished culture of cotton; but it is needless to enumerate them, particularly as it has been repeatedly done before. The few articles named above are not likely to be superabundant for a long time yet, and such soils as are suitable for them are in great plenty, and as for the soils not calculated to produce them advantageously, there is an abundant choice of other objects. All we want is knowledge and industry.

The patriotic exertions of the Rail Road Company are above all praise. The facilities which their successful efforts will give for the speedy transportation of produce and of every thing that is or may become objects of commerce, must have a very great effect in promoting the welfare of the State. But is it sufficient? Is the amount of produce sufficient to reward them, as they may merit, for their great expenses? It will undoubtedly promote, to a certain extent, the increase of the produce of the country, and act, I hope, as a stimulus to the acquirement of the knowledge herein recommended. But why not carry on both objects simultaneously, which can and ought certainly to be done, if the acquiring of the latter has not been previously effected, as it should have been?

Reflect, fellow citizens; reflect, look around you and you will see that your country is in an unhealthy, dangerous state. Exert your powers and influence to save it. Enable it to follow its natural pursuits according to the most advantageous methods, by extending the means of knowledge. Render it comparatively a garden, a source of profit and of pleasure. By these means, and probably by them alone you will be able to save it.

Can it be true, as some reasoners affirm, that there is no such a thing as patriotism. That its existence is only found in romance and in the mistaken and sickly brains of enthusiasts? That every thing must be referred to individual interests? I cannot, I will not believe it, notwithstanding the many apparent proofs of it at the present time. But let us admit it for the sake of argument, and even then, it can be shown very certainly that in an extended view, the prosperity of our neighbours is a benefit to us, and that the general good is made up of individual good. It is then in

many true points of view the personal interest of one class of society that all the other classes be prosperous. The mass of individual happiness, like that of individual wealth, constitutes the happiness, wealth and prosperity of the State.

Late as we are, to attend to the producing of this most enviable state of things, we may yet be saved, and the present time is always the most seasonable for doing good. If any thing is desirable at this particular juncture, it is that we should adopt some great interest in which all can join cordially. By it much of the party animosity, hatred and most intemperate discussions, may be softened and forgotten. By it men intended by their situation and co-citizenship to be friends, will recover a great deal of that friendly and charitable feeling towards each other, which ought never to have been impaired. The present unfortunate excitement by an acknowledgedly slight difference of opinion, may, in a great measure, be allayed by the adoption of some such plan as is here earnestly and most sincerely recommended, and to which no reasonable man can have any solid objection.

It may be that I ought to apologize for thus indiscreetly intruding upon you with my views and wishes; but I am not without some personal interest in the matter; I have lived among you many years and I hope to spend a few more. Only a few more it can be at best, and I should like, before I go, to witness in South-Carolina, at least the prospect of its durable prosperity.

N. HERBEMONT.

ART. II.—*A more General Use of the Plough recommended to the Planters of the Lower Country; by A PRACTICAL PLANTER.*

“ Mount Vintage, P. O. So. Ca. 5th July, 1831.

Dear Sir,—It may appear, and no doubt will be considered presumption in me, to attempt recommending to the lower-country planters, particularly those on the sea-board, an improvement in their mode of culture, when it is well known, that many of them are not only of scientific at-

tainments, but long experienced in planting, and others have devoted all their lives to this pursuit. Still some hints may be thrown out, by an up-country planter, that may have escaped their attention, or have never been attempted, from which may be culled some information on the subject of agriculture, and the following remarks are submitted to their consideration.

The use of the plough is objected to:—First, that it pulverises a soil which is always too loose, subjecting it to be blown away by the violence of the winds in March and April, which are so much dreaded, and not unfrequently from their long continuance, the beds in which the cotton is planted, are nearly levelled to the surface. This way of reasoning I will endeavour to prove erroneous, and shew, that the use of the plough will have a contrary effect, and in a great measure remove the evil. What is termed listing, is drawing from the old beds on a hard surface, all the trash, and part of the old beds with a hoe, preparatory to bedding. After the beds are made a mound is raised for the wind to act upon, which evidently must prove more destructive than it would be on a more level surface. Instead of listing with the hoe, the plough should be substituted, by running a deep furrow with a broad and long pointed shovel plough in the middle of the alleys or spaces between the beds, then return with mould-board ploughs, (commonly called *yankees*) all the trash within their reach, and continue these ploughs until a space or bulk is left of sufficient width to be split by the same kind of plough that made the first furrow, which is termed the water furrow, this will leave the beds level, designated only by the water furrow, and will place the list below the surface instead of above it, counteracting the effect of the wind, which otherwise would act so forcibly on the raised list and beds. Besides it will be a great preventative against drought, which is annually to be encountered, the roots of the plant being so much below the influence of the sun. I am aware that high beds are adopted, with a view to prevent their being overflowed in excessive rains, and to guard against what is termed scalding, but this is a mistaken idea. When we take into consideration, that those beds are drawn up to a peak or housetop form, and can absorb but little of the water that falls into the alleys or spaces between the beds, until they are filled up, and the water remains for some time between

the beds. The sun acting upon it in this stationary condition scalds the roots of the plants, and the planter's hopes are lessened.

If the whole space of ground was well broken up, the water furrow only intervening, the absorption would be more equalized, and the scalding found less. I wish to be understood, that in this particular, I have reference to high lands, for in low lands, I know that high beds are necessary to run off the superabundance of water into ditches, from thence to be discharged into natural drains.

Another reason is given against the use of the plough. The expense of keeping horses, this would be more tenable ground, were it not examined into. It is admitted, that if planters will persevere in the old and ruinous practice of purchasing their provisions, it would be madness in them to employ horses and ploughs, but when we consider, that half the number of hands with the assistance of these means, will make as much if not more cotton, and all the provisions to support the whole planting establishment, with more ease, and comfort, then double the number without them, the position must be sustained. I would ask any old planter, if it is not within his knowledge, that those who have always made their own provisions, have not accumulated property in a greater ratio, than those who have depended on purchasing; I could point out many such instances. The adage, "that one bushel of corn made at home, is worth two from abroad," is perfectly correct, when it is recollected, that purchased corn is frequently in an unwholesome state, and every time it is removed the quantity is lessened, besides the time and expense of transporting it.

It is also objected, that if the quantity of land which could be attended with the plough, was cultivated, the product could not be picked out. There would be some reason in this, if the crops of cotton were as productive as they were when it first became the staple of our country and afterwards, when three hundred weight of cotton was frequently made to the acre. But of late years the seasons have become unpropitious, the lands are exhausted, and from the extension of culture, insects are more numerous invited to its destruction. If now one half of this quantity is made, it is considered an excellent crop, and I believe the lower-country planters more frequently want cotton to pick, instead

of hands to pick it out. Even if ploughs were but partially used, the benefit derived from the facility with which the work would be performed in the preparation for planting, would be of great consequence. One plough running three furrows, will list two and a half acres per day, this will require with the hoe five hands, at the rate of half an acre each per day, the plough will bed up two acres per day, which takes four hands, this difference in ploughing is occasioned by a greater number of furrows to be run in bedding than of listing, calculating the bed to be five feet apart, but if they were four feet, there would be no difference. I have been much under the mark in this representation, fearful, as was the case with the Irishman, "that if he informed his friends at home, that he ate in America, at three meals, meat three times a day, they would not believe him." It is also said by the lower-country planters, that the plough runs too deep, it certainly must have escaped their observation, that ploughs can be graduated to run from two to more inches deep as may be required, or they are determined to pursue the hoe system of tillage. There are various kinds of ploughs, from the mould-board to the scraper, which every planter should possess, and they should be applied in the different stages of the crop, as well as the state of the weather.

I would advance other reasons why the plough has a decided advantage over the hoe in the attendance of a crop. Every planter must be conversant with the difficulty of getting rid of grass in wet seasons—the common practice where the plough is not used, is shaving down the grass with the hoe into the alleys, and in order to get rid of this accumulation of grass in the continuance of wet weather, holes are dug in which it is buried; a most tedious operation. With a proper kind of (mould-board) plough, all this grass can be turned under, and so completely smothered, that during this kind of weather the corn and cotton will suffer little or no injury from it, indeed when the grass is young, it supersedes almost the necessity of the hoe, except merely as a dressing.

The plough is rejected in the lower-country from an apprehension that it runs too deep for the soil, which can only arise from the want of a knowledge of it, the plough can be graduated to run from one to as many inches deep

as may be required, executing the work with more uniformity than can be done with the hoe.

In this section of the country, where the elevation of our hills are sometimes found to be 45 degrees, we attend from 12 to 15 acres to the hand, equally divided between cotton and corn, besides small grain. The former quantity, however, is to be preferred, the latter may be considered over planting. In the lower-country, where the lands are level, and so much more open than with us, with how much more ease can this be performed.

Boys and girls, that are only half hands at the hoe, will make full hands at the plough in the lower-country. In the upper-country they are put to the plough at twelve years of age, but the stiff, broken, and rocky state of the land will not admit of effective work to be done by them, the stronger hands are preferable. Now, Sir, after all the representations that I have made, which are within bounds, and I believe to be correct, let the lower-country planters make a calculation on the capital employed without the use of the plough, and that which may be requisite with it, to produce the same nett amount of income, and see on which side will be the preponderance.

A PRACTICAL PLANTER.

ART. III.—*On the Management of Gullies.*

“Leon, Florida. May 16, 1831.

Sir,—Observing in the last number of the *Agriculturist* an article on the management of gullies, and having tried in particular the method there proposed, as well as the various others enumerated, I venture to recommend as less tedious, expensive, and discouraging, a mode which I have myself, in common with some others, practised with uniform success. At the season of the year when the general ploughing (flushing as it is termed) for the ensuing crop comes on; a practice indispensable where melioration of soil, and constant and increasing fertility are the objects in

view—commence the work by ploughing up with a large double-horse plough, every gully and *wash* in the several lands, into which the field is divided. Taking a large and very deep gully, by way of example; one that would effectually conceal driver and horses—run lengthways immediately through the bottom of it the first furrow, on which throw the land of two others, making a bed or list as high as possible in the channel of the gully. Continue to throw earth upon this bed, ploughing around it until the last furrows strike the top of the gully on the opposite sides; return to the bottom and repeat the operation: and repeat it again and again until the hollow of the gully is scarcely perceptible, or at least sufficiently diminished to allow crossing it, with a deep furrow, in the after ploughing. On the gully, so filled, spread a good coating of straw, leaves or manure, and in the general breaking immediately following take care to turn in the straw, manure, &c. and to cross the course of the gully at the first ploughing. Sow upon the land thus prepared, wheat, rye or oats, mixed with clover, orchard grass, or timothy, and suffer the crop to mature and fall upon the spot. When crab-grass hay with the seed in it can be had, I should esteem it a good substitute for straw or leaves, and grass seed. But the object being to invite vegetation a slight mixture of manure will greatly promote that end. Indeed, a slight top-dressing I consider essential, and in proportion to its quality will be the success of the operation. When the sides of the gully are very steep, and the channel narrow it is often necessary as a little practice will soon suggest, to throw, in the first place, some earth from the sides into the bottom, in order to obtain better footing for the horses. It is an easy matter to stop a gully, with a bridge of stone or a wattle; but unless at the same time you put the soil in a condition to support vegetation, the work is as vain as it is endless. The first gully is filled merely to give way to another by its side. Put the soil at once in a state to support grass, and a slight top dressing will do this, and the work, with rest, is complete. Brush answers this end imperfectly; requiring length of time and renewal, and unless combined with wattles, or bridges, often proves totally ineffectual. The rain, the wind, and the sun, penetrate the best covering of brush, and waste goes on. But on the soft and deep bed of the gully filled by ploughing, the rain falls harm-

lessly, being quickly and generally diffused throughout the mass; and the green coat which before the heat of summer comes on, covers it, secures it effectually from the waste by evaporation. One precaution in ploughing up is, however, to be observed, and that is to perform the work as you come to each piece of land. By suffering much time to elapse between the ploughing up, and cross ploughing, the work is left exposed with the furrows running down hill to the damage of heavy rains, at such times, very destructive. In one or two instances only I have been obliged to repeat the operation of ploughing up: never more than once. Close, deep, faithful ploughing, is the best security against this repetition of labour. Horizontal ploughing, judicious rotation of crops, the making, saving, and application of manures, are the best preventatives, and combined with ploughing up the best remedies, the only cure for gullies.

VIRGINIUS.

ART. IV.—*Account of a Native Grass supposed to be the Gama Grass; by WILLIAM ELLISON.*

“Fairview, June 10, 1831.

Dear Sir,—I observe in the June number of the *Agriculturist*, an account extracted from the *Mobile Commercial Register*, of a kind of grass, called the Gama Grass; mentioning it in high terms of commendation. From the description given of it, I was forcibly struck with the exact resemblance, (judging from description) between it, and a native grass, growing on the flat lands of Dutchman's Creek, in this district, and no doubt in other parts of the State. I took possession of the place I now live on, in the early part of last year, and early in the spring, observed this grass, among the earliest of the grasses; and that it grew with great luxuriance and rapidity. I immediately formed the conclusion, that if it could be cultivated, it

might be made, a most valuable addition to our agricultural resources. I examined it very particularly, and frequently, when riding in the field would stop, to permit my horse to enjoy the luxury of cropping it; and it seemed to be to him a luxury indeed. I cut parcels of it several times, to test the rapidity of its growth; and found that it would grow in one week astonishingly, and I believe it might be cut every month. I determined to transplant some of it, and collect the seed; but found as stated by the writer in the *Mobile paper*, that they fell off singly, or a few at a time, and disappeared, I could not tell how. I have dug up some of the young plants from seed deposited on the ground, and some of the roots, and planted them on high lands, to try if it will bear such a change of soil and situation. I spoke of it to a neighbour a few days ago; (before I received the last number of the *Agriculturist*,) as, in my opinion, a grass well deserving attention, and that I would try if it would grow on high land, and he told me it would grow on any land. He has planted land adjoining mine, for some years, and says he has often seen it. It can grow no where but in enclosed fields; for so ravenous are stock after it, that they never suffer it to rest until it is destroyed, where they have constant access to it. It is so much like the grass described in the *Agriculturist*, that if I were to give a particular description of it, I would be content to copy that, and consider it complete. If the two grasses are not precisely alike, they are certainly of the same family. I was, in fact, so pleased with it, that I determined to attempt to cultivate it, and publish its qualities, and I have no doubt, that it may be cultivated and increased with great facility. Once well set, and nothing but occasional manuring will be necessary, for its thickly matted roots take entire possession of the soil. How long it has been in its present situation, I am unable to say; but probable for a long time: as the land around it has been in cultivation for nearly half a century. I think it may be propagated more speedily from the roots than the seeds. I think it highly probable, that the same kind of grass may be found in many situations in the lower part of the State. I will, as soon as the boats commence running next winter, send you a box of the roots, and some of the seeds, if I can succeed in gathering them. I have never been able to learn the common or popular

name of this grass, or that it has any; and as I am ignorant of botany, I am unable to give you the botanical name.

I take this occasion to tender you my thanks, for the seeds that you were so kind as to send me, and would willingly comply with your request, to send you rare seeds or plants, if I possessed any. I regret my almost total ignorance of botany, and my consequent incapacity to contribute much, to extend the knowledge of the native plants and flowers of our country. I have, however, seen a plant which appeared to me to be very pretty, and I will endeavour to send you some of the seed and perhaps a drawing of it, if I can procure it in full bloom. It might possibly be prized by florists; for many things of the kind rise into fashion and notoriety, which are little prized in their native localities: or it may be thrown aside as useless, and considered as an evidence of my want of taste; for I have had but little intercourse with Mademoiselle Flora, in my past occupations.

I observed in the May number of the *Agriculturist*, Mr. Simpkins' rejoinder (to use a phrase somewhat professional) and have only to say that Mr. Simkins is mistaken in supposing that a feeling of resentment had slept in my bosom for a long time. I postponed noticing his first number until the appearance of the second, under the hope that the latter might do away the unfavourable impressions of the former; but when I observed the different manner in which he dealt with Mr. Hillhouse, I determined to answer him. I was unwilling to believe that Mr. Simkins intended wantonly to injure my feelings; for I believe it is not in his nature wantonly to injure the feelings of any one: but I felt that from some cause Mr. Simkins had departed from that courtesy which I had reason to expect from him. But enough. Let the subject drop. I can assure Mr. Simkins that I am perfectly willing to return with him to the *statu quo* of former courtesy and good understanding. So far from wishing to throw cold water on the practice of horizontal ploughing, I am, perhaps, as zealously, if not successfully engaged in it as he is, and if it could happen in his way to partake of the humble hospitalities of my roof, (to which no man would be more welcome) I could join him, in a horizontal promenade, not "around the hills of all our difficulties," but around some of mine. Mr. Simkins may be assured, that no man wishes more ardently than myself,

that our agriculture may be improved, and means adopted to preserve the lands of our common country, and check that continual drain of population, which tends so materially to impair our strength. Some little additional experience and observation, enables me to say something more on the subject, which I must reserve for another number.

WILLIAM ELLISON.

ART. V.—*On the Improvement of Clay Lands by the Culture of Guinea Corn; by AMICUS.*

“ Charleston, February 25, 1831.

Dear Sir,—It is rather surprising to me that so little has been said in the *Agriculturist*, relative to Guinea corn. It certainly is deserving of some attention, both as food for man, animals and poultry. More especially the latter—for which purpose I principally cultivate it. But it also affords an excellent and nutritive dish, not easily distinguishable from small rice when properly dressed. If sown for soiling of cattle, or to be cut and given to the work horses whilst green, I know very few plants that will yield more, for it may be cut repeatedly, and an abundance of seed may be saved even after several cuttings have been had. The quantity of forage or leaves and stocks which it yields, makes it peculiarly suited for another purpose, which I have not yet seen noticed by any planter, and to which I wish to draw their attention. It is the improvement of clay lands, by turning this abundance of vegetable matter under, and this may be done with advantage even after a full crop has been obtained. More weight will be given to a statement of facts than any argument I can adduce, and as I have been so fortunate as materially to improve a poor piece of land, by this means, I feel bound to state my experience, in return for the many benefits I have received from the communications of others.

Some years ago, I purchased a plantation which was principally valuable for its swamp lands. The high lands had in former years been worked, but were at the time completely exhausted. Those in the neighbourhood of the dwelling were of such a barren appearance, that I could not bear the sight—they were clay, and so poor as not to be able to bring broom grass, which as you know will grow on the very poorest soil—but to give you still a better idea of it, I will merely state that the whole field, except in a few scattering spots presented nothing to the eye but one red sheet. It was literally a bed of red clay, without any covering of vegetable matter, except as before stated, in a few detached spots, and this too after it had been resting for five or six years. What was to be done I scarce knew, but that something must be done I also knew, for it was immediately in front of the house and its sterile appearance I could not brook, especially as it gave rise to many jokes about the poverty of the plantation, which was true only as regarded this spot, but it was a sore spot and somehow or other, I winced, whenever I was laughed at about it. I determined, therefore, if possible, to cover it with vegetation of some sort, and as I could not spare manure for a piece which would yield me little or no return, at least for many years, I determined to see whether there was not something which would at least vegetate there, even if it did not yield much. In this dilemma was I, when it occurred to me that I was constantly in want of grain for my poultry, and perhaps I might obtain some little from this field, which on account of its contiguity to the house, could be more easily minded, when the ears began to ripen. I accordingly had what little grass was on it listed, and where there was none I had the formula gone through with—about the middle of April I planted Guinea corn on this listing or small bed, (if you will so call it) the rows were five feet apart, and the seeds were dropped in chops made with the hoe at a distance of 12 inches. As soon as it was tall enough I thinned it out to a single stock to each hill. As you may suppose I was not much troubled with grass—the only workings I gave it was one ploughing, to break up the whole of the ground and I had a little earth hauled up once around the plants. I obtained from this crop, an average of eight bushels per acre, the plants were gone over twice, and the tops cut off, leaving all the stalks and leaves to be

listed in for manure. This was much more favourable than I had expected, and I was encouraged to make further trials—accordingly I immediately listed in all the stalks and leaves, drawing a good quantity of earth over them, so that they might decay by Spring. Late in March I planted it again with Guinea corn, and gave it two ploughings, and hauled it up once with the hoe. This year I made 12 bushels per acre. I again had all the stocks, &c. listed in early in the fall. In performing this operation, I found that the stalks from the last crop were not entirely decayed, but would be just in that state in the early part of the Spring to furnish food for the young plants. Circumstances prevented me from attending to this crop, but from appearances it was fully equal to the last.

Having been so far successful, I determined once more to try it in Guinea corn. The quantity of leaves, stocks, &c. remaining from the old crops which had been buried previously, together with that from the last crop, made quite a formidable appearance, and I would have feared to have ventured so much dry and undecomposed vegetable matter in the beds on sandy land—on such it would have been an injury, but on mine which was a very tenacious clay, it was highly advantageous, as it not only benefited the crop by furnishing nutriment, but also acted mechanically on the soil, keeping it open and permable to the roots. This year I paid somewhat more attention to it. When about 6 inches high, I had a bull-tongue plough run close along side of the plants, and when it had reached 12 inches, I had earth hauled up, and thinned it out to one stalk; I took care to see that this working was well executed, and as I was still free from grass in this field, and had need for all hands at my market crops, I gave it no further attention. It grew, however, most luxuriantly, and resembled a thick cane brake, and I obtained four cuttings from it this year, and the product could not be less than twenty-five bushels. I did not measure but judged of it from the bulk compared with the previous crops. Thus have I given you the history of this field for four years, and you will agree with me, that the Guinea corn has been so far beneficial. Whether it would have proved so on other than clay land, I am unprepared to say, but would be very glad to hear from some of your correspondents what their experience with this grain has been.

I remain, your's most sincerely, AMICUS.

ART. VI.—*The culture of the White Poppy in the Southern States recommended; by THOS. F. HAZZARD.*

“ West-Point, St. Simon’s Island, Glynn County, Geo. }
May 29th, 1831. }

Mr. Editor,—That your useful and instructing Agriculturist should continue to prosper, and diffuse a general stimulus and practical emulation among the Southern farmers and planters, ought to be universally admitted. Like the children of Israel, we have pursued separate and distinct modes; without any regular communication of ideas or experiments to each other. So the failure of one was unknown, and of no avail to his neighbour. The establishment of your periodical has proved a most seasonable rallying point: an agricultural Alkoran, to which the Southern planters can communicate all their sins and errors in farming. We can repent in sincerity and truth, and honestly determine to amend our way, and by a free exchange of our practical doings, save one another from future destruction, by stirring up a lively zeal, and exciting a fresh and vigorous system of action.

Mr. Editor, you are a centinel in the agricultural temple, continue to warn the planters to practice greater industry, more care and attention to collect manures, of which cotton seed is one of the most beneficial, to spend their summers in their own State, and discontinue such an annual out-pouring of money amongst the Northerners, who gladly enjoy the harvest of his profuse liberality. Who can count the millions of dollars not only actually expended, but lost by the negligence and absence of planters; and their folly in carrying so much out of their own State. There is a time for all things, and I hope there will be a day of general repentance to the planters; for their sins against economy and prudence have been as scarlet—and their neglected and wornout fields cry aloud against them.

Mr. Editor, we have a most salubrious and agreeable climate on St. Simon’s Island, where the citizens of Charleston and Savannah might spend their summers in perfect safety. Consumption, that hideous enemy of our species, has never visited this island; unless it be the consumption

of oysters, venison, and fat beef, which even John Bull might relish, although 'tis none of merry old England's.

The aspect of Southern affairs are truly discouraging; the value of our sea-island cotton is now reduced to its minimum. 'Tis well nigh destroyed, not like the Egyptians in the Red Sea, but by a much shorter mode, a greater devise of Belzebub, this modern tariff-system, which bids fair to hurry us into a sea of tribulation. It is a sad reverse for us, and well may we growl and gnash our teeth, and bite too, before we are starved. I fear our sea-island cotton is taking its last go down, and that we shall be compelled to seek some other substitute sooner or later. We cannot all grow sugar or rice or silk, which is a natural enemy to sea-islands, like some of our politicians at Washington, to each other.

My object is to invite and recommend your readers to make an experiment in the culture of the White Poppy. *Papaver Albuni Somniferum*: Species 7th Capsula et Succus Spissatius: genus 1015 of Willdenow: class Polyandria Monogynia: natural order Rhceades, which appears to be completely adapted to the temperature, soil and latitude of Carolina, Georgia and Florida, and even still more extensively. Among the numerous public spirited men who are constantly striving to do good, and introduce new and valuable products into the South, I think the name of Dr. Alexander Jones, (now of Athens, Georgia) ought to be preserved and remembered; through the politeness and courtesy of this gentleman I received my present seeds, which were divided and presented to several of our islanders: mine were planted in February, came up well and have grown with great vigour and rapidity. I am convinced that the poppy is a much more healthy and thrifty plant than our sea-island cotton, it required only two hoeings in April, after which it soon rose luxuriantly, and completely outstripped every opponent. Insects of every kind avoid it with terror and detestation, whilst the industrious bee rejoices in its rich and delicious nectar, thousands pay their morning visits, with the greatest eagerness and delight; so if only for their benefit it would be good management to cultivate this splendid annual.

They began to bloom early in this month (May) and are now in all their glory, a more gaudy and beautiful display I have never seen; as ornamental flowers they are most exqui-

sitely distinguished *belles* even among Flora's gayest and varied beauties. I have been quite delighted to find several different varieties, of the most delicate tints, and all sweet smelling, which I did not know was peculiar to the Persian seed. The capsules are larger than I had any idea of, their size is of the largest lemon. I have now commenced the process of scarifying, and have succeeded in collecting some very pure and excellent opium. It can, therefore, be demonstrated that we can manufacture Georgia opium to any useful amount; and I really think it may be made, for hammock lands, a profitable business. If our sea-island planters are disposed to make trial of this culture, I see nothing to prevent it. The most feeble hands can perform the labour, it is light, and handy work, requiring only practice and a little more experience, and can all be finished by the middle of June; which would add the number of opium growers to cultivate more provisions, of peas and potatoes, the neglect of which has proved a fatal error in which most of our Southerners have sunk thousands. Opium as an article of very extensive use, and great commercial importance throughout the world, has been subject to very little fluctuation, its value has continued for years at a fair profit. How it will compare with cotton, acre for acre, is all that is now necessary to be ascertained.

I shall take care of my poppy seed and will in due time forward you a supply for distribution to your subscribers, and will then communicate the simple *modus operandi*, which I find is as easy as to raise cabbages.

Dr. Robert Grant introduced on our island the Black Pepper (*Piper Nigrum*.) Spices 1st Fructus: genus 74 of Willdenow; class Diandria Trigyn.a: natural order Piperitæ. It is a rich luxuriant looking shrub, the leaves and stems are highly aromatic, but our seasons, warm as our Georgia sun is, have hitherto proved too short and feeble for this fiery foreigner, (it is, however, a female Mr. Editor) and is not yet naturalized.

The Date, a most dignified lady, is here quite a sterile old maid, notwithstanding it hath no matrimonial restrictions. We cannot have every thing on St. Simon's Island, otherwise it would, indeed, be quite a little paradise to itself. Olives are in full growth and promise well. We have a great variety of most delicious grapes, both foreign and native; and some neutrals, like our late whig cabinet.

Carolina, thou noble and generous soil; the place of my nativity; the sepulchre of my ancestors; I sympathize in the virtuous and manly straggle of thy children; may they awake from their delusion, and be firmly united. Let not those enemies of our interest divide and devour us in succession.

May the same spirit which guided our fathers in '76, influence their posterity; to preserve the Constitution in its true and original intent and meaning, and repel this political fanaticism which is springing up in our country.

I salute you, Mr. Editor, with my best wishes for your continued usefulness and prosperity.

THOMAS FULLER HAZZARD.

Memorandum.—"In the year 1735, Abraham De Leon, an enterprising and respectable Jew, originally from Portugal, and then a freeholder in Savannah, cultivated various kinds of grapes with great success; among his collection were the Oporto and Malaga."

Quere.—Are any of these two kinds now existing in Carolina or Georgia?

"It also appears that the Saltzburghers who had settled at Ebenezer, 25 miles from Savannah, in 1735, began to experiment in the culture of cotton as early as 1738, which was even then found to yield abundantly, and of a most excellent quality."

The Saltzburghers were a German emigration.

Query.—From whence did they procure their cotton seed? It is my opinion that this is the original stock from which all the varieties of sea-island cotton have sprung by successive reproduction; 93 years, with continued culture, and all the combined effects of climate, soil and manures, are quite sufficient to produce a much greater variety and phenomena in nature. We are also informed by that valuable work the *Encyclopædia Americana*, that cotton was found originally an indigenous plant in America, consequently its varieties must have been produced by time and culture.

ART. VII.—Results of some experiments instituted by the Agricultural Society of South-Carolina, to ascertain the proper distances for planting Rice.

[Communicated by the Society.]

Experiment 9th.—An acre of rice land being divided into four equal parts—No. 1. The first quarter will be planted with 65 rows. No. 2—75 rows each with broad trenches and the seed scattered after the old mode. No. 3. 85— and No. 4. 100 rows. These last two to be sowed or planted in very narrow trenches and not scattered, but as much in *line* as possible. The object of the experiment is to discover the precise yield of each quarter.

TO WILLIAM WASHINGTON, Esq.

Chairman of the Committee on Experiments
of the South-Carolina Agricultural Society.

Sir,—The Sub-committee to whose conduct was submitted the Ninth Experiment, beg leave to make this their second report on the same.

One of this Sub-committee, Dr. Read, planted the acre of 210 feet square in the mode prescribed by the Society by the Ninth Experiment—the result was as follows :

No.	rows.		bush.	pecks.	qrs.
1	65	yielded	10	2	0
2	75	"	15	0	0
3	85	"	24	0	0
4	100	"	20	2	0
Total,			70	0	0

Another of this Sub-committee, James Ferguson, planted the same to the acre, and in the manner as described in this report for the year 1826, to which he begs reference. The result was as follows :

No.	rows.		bush.	pecks.	qrs.
1	65	yielded	12	0	0
2	75	"	15	0	7
3	85	"	14	1	0
4	100	"	16	1	4
Total,			57	3	3

An adjoining acre was not measured off and harvested by the negroes in the absence of this experimenter as was directed to have been done; but one half acre adjoining the experiment acre was harvested and stacked together with another half acre at a small distance from it, which when threshed together turned out 59 bushels: (these half acres were Cooper river measure 150 feet square) the probable average of the field of 36 acres in which the experiment was made; was 52 bushels per acre of good heavy rice which took about 20 bushels to 600 lbs. of clean rice.

None of the operations of this experiment came immediately under the supervision of this member of the Sub-committee, except the planting, the threshing and the measuring to which particular attention was paid.

Another of this Sub-committee, Samuel Gourdin, reports as follows:

An acre of land (210 feet square) having been designated in a field containing 27 acres, was lightly dug and turned in, in the early part of February, 1827. The field was shortly after put deeply under water, which was retained until the latter part of March, when it was drawn off and the sods chopped up and marked. The acre was then divided into four equal parts, No. 1, 2, 3 and 4.

No. 1. Was trenched with a hoe $4\frac{1}{2}$ inches wide, 65 rows, and was sowed with a $\frac{1}{2}$ bushel of seed rice, which was scattered over the whole width of the trench or furrow.

No. 2. Was planted in the same way as No. 1. but contained 75 rows.

No. 3. Was trenched with a hoe $2\frac{1}{2}$ inches wide, 85 rows, and was sowed with $\frac{1}{2}$ bushel of rice, which was planted as much as possible upon a string.

No. 4. Was planted the same as No. 3, except that it contained 100 rows.

April 11—The said acre was this day planted as above-mentioned.

May 16—Was hoed lightly, and the grass carefully hand picked; two hands to the acre.

May 18—Was hoed deeply, being completely sodded over, and the grass picked out; two hands to the acre.

May 20—The long-flow was put on, and the water kept deeply over the land for four days, so as to give the rice a good stretch—on the fifth day it was slacked down sufficiently to enable the rice to appear above the water, after

which the depth was regulated to the growth of the plant, care being taken to change it (the water) once a week.

June 16—The long-flow taken off.

June 23—Was hoed deeply, and the long grass taken out by hand; two hands to the acre.

July 23—Was hoed and hand picked; two hands to the acre.

July 28—The harvest flow was put on, and retained until a few days previous to the harvest.

Sept. 12—The whole field harvested. The product of the said acre was as follows:

No.	rows.		bush.	pecks.	qrs.
1	65	yielded	14	1	0
2	75	"	17	1	0
3	85	"	19	0	0
4	100	"	14	0	3
Total,			64	2	3

It may not be improper to state, that the product of the whole field (27 acres) yielded an average of 60 bushels of clean market rice, and as nearly as can be computed, 3 bushels of straw and dirty rice to the acre. The product would have been considerably greater, but for the severe gale we experienced on the 27th day of August, which severely injured most of our crops. This fact is proved by the unparalleled quantity of light rice we have seen this year, and of which there is such a general complaint.

The other member of this Sub-committee, R. W. Vanderhorst, has as yet sent no report.

Respectfully submitted.

JAMES FERGUSON,

Chairman.

Doelen, St. John's, 20th February, 1828.

ART. VIII.—*On the Use of Chloride of Lime; by A CAROLINA PRACTITIONER.*

“ Charleston, 23d June, 1831,

Dear Sir,—I have to acknowledge the receipt of your letter of the 14th inst. and with pleasure communicate to you, all the information I possess relative to the Chloride of Lime.

The Chloride of Lime, has, of late, become an important article, and, of its utility in destroying or moderating the effects of Malaria, much has been said. We all know that sprinklings of the chlorated water will, in a moment, neutralize the foetid odours arising from the filthiest vault, drain, &c.; it is, also, much used in purifying the air of crowded hospitals, prison rooms, cabins of ships, &c. &c. The manner of using it is simple, and will amply remunerate us, should it, upon further trial, answer our expectations in arresting the effects of marsh-poison upon the system. To the agriculturalist, it would prove of incalculable advantage; his lands would not only increase to an amount far beyond their present value, but he would also have the satisfaction of residing upon his plantation, or visiting it with impunity, during the summer months.

As one of the best means of testing the utility of the article in question, as a disinfecting agent, I would recommend to our planters to introduce the lime into general use among the families of their managers residing, during the sickly season, on their plantations. Let it be used in different forms; for instance, let those residing on one plantation use it in the form of *paste*—on another in the *dry* form, and on a third by *sprinkling* the chlorated water over the floor of the bed room. Such an arrangement could be easily effected by gentlemen residing in the same neighbourhood, and the result made known through the medium of your valuable journal. Perhaps it would be preferable that the experiments should be conducted by the members of the Agricultural Society of our State.

If any of our planters doubt the efficacy of the lime, they can use it in conjunction with large fires made around their houses, as it is well known that *fire* and *smoke* have a considerable influence in modifying the effects of marsh mias-

mata. Dr. Harris of Philadelphia, in treating of the intermittent fever, as it appeared in the neighbourhood of the Schuylkill, in the autumn of 1820 and 1821, mentions that "a gentleman who burned large quantities of lime had two tenant houses for his labourers, one about two, the other about twenty rods off the kiln. The family living two rods escaped the epidemic entirely, whereas that residing at the distance of twenty had four cases." "This," he goes on to add, "must be ascribed to smoke, for every time the kiln was on fire, the nearer house was not only covered, but filled with smoke." Again: Dr. Mac Culloch cites a very striking instance of the utility of smoke and fire, "A Superintendent," says he, "engaged in directing the cutting of wood in Africa, erected thirty earthen furnaces on the spot where his men were employed, lighting them every day. Before this he had always from forty to forty-eight of his workmen sick; when, in a short time, they were reduced to twelve, then to four, and finally to one."

During the heat of the day, malaria is comparatively mild, being rarefied and dispersed through the atmosphere by the heat of the sun, while at the same time we are all aware of the danger of exposure in the country before, or soon after sun-rise; or remaining too long after the sun's rays have been withdrawn. Hence the necessity of making up fires, long before the sitting of the sun.

During the last autumn, the Chloride of Lime was extensively used in the tents of a detachment of United States' troops, who marched from this to the Cherokee nation. The detachment left Sullivan's Island on the morning of the 13th of September, and arrived at Camp Eaton on the 3d of October, having travelled a distance somewhat over 300 miles in twenty days, including unavoidable delays on the road. They travelled through a very unhealthy region of country, greatly exposed to the heat of the sun and evening dews; and although there were upwards of sixty souls, including women and children, they arrived at Camp Eaton, not having encountered a *solitary case* of sickness of any description. I am not prepared to say, that the health of the men should be attributed solely to the use of the lime, but I do believe that it had a powerful tendency in protecting them from disease. As soon as the tents were pitched the lime, in the form of *dry powder*, was

sprinkled within, while, at the same time, large and constant fires were kept burning round the tents. Mr. Hugh Rose, (at whose suggestion the experiment was made) recommended that it should be used, not only in the dry form, but also by placing a paste of the lime in a saucer; this, however, was not adopted owing to its inconvenience.

Many have questioned the efficacy of the lime in the case above cited, and have attributed the health of the men to the excitement of the march. That *excitement* had a tendency to ward off disease, I do not pretend to deny; yet, I cannot consent to the belief altogether, as the *women* and *children* also escaped.

Upon the whole, the Chloride of Lime should be regarded as an article well worth the trial of our planters, and, as such, I do recommend it to their serious consideration.

A CAROLINA PRACTITIONER.

ART. IX.—*Proceedings of the Horticultural Society of Charleston.*

The anniversary meeting of this Society was held on the 13th of July. Our readers are aware, from our previous notices, that this Society is but of recent origin, in fact, it can scarcely be said to be more than organized even now, yet from every indication it promises to be most popular and useful. Notwithstanding the weather was very inclement, there was a full attendance of the members and great punctuality observed, which evinced a lively interest in the proceedings of the Society. On the tables were placed a number of choice flowers and plants, fruits and rare vegetables. Our limits will not permit us to enter into minute details of these, nor can we pass them entirely by.

Among the flowers sent by Mrs. Cochran, we noticed two species of Dahlias, *Caprifolium flavum* and *sempervivans*, Pinks, of different kinds, Hydrangeas, Cassia, &c. Among those furnished by Mrs. Wm. Johnson—*Centaurea*, two species of *Canna*, *Salvia coccinea*, *Lathyrus*, *Gardenia*, and several others. From Mrs. Davis—*Phlox*, *Lagerstræmia*, *Hibiscus*, *Tiger lilly*, &c. From Mrs. Backman and Miss Martin, the double flowering, Roman, Catalanian and Nutmeg Myrtles, *Amaryllis gigantea*, *Lilium tigrinum*, *Euphorbia variegata*, Dahlias, Oleanders, Cle-

mais crispa, Spigelia, Lawsonia inermis or henna of the East, Rosa olerata, and many others. Mr. Noisette sent a small collection from his nursery, among which were Lythrum, Clethra alnifolia, Hæmanthus puniceus, &c. Mr. J. Michel, also presented some flowers, White Chasselas and White Muscat Grapes and some Apples, borne on trees not more than four feet high. The new vegetables consisted of the Kohl Rabi, Silver or Sea-kale Beet, Yellow Mangold Würzel and Tree Onions. A very large Beet was sent to the Society by Mr. J. T. W. Holmes. The season had been extremely unpropitious, and many of our finest flowers, fruits, and vegetables were destroyed by the immense quantities of rain which had fallen. We will now proceed to give an abstract of the proceedings of the Society.

At 5 o'clock, P. M. the meeting was called to order by the President, and the election of officers gone into. The following gentlemen were re-elected to serve for the ensuing year, viz.

ELIAS HORRY, <i>President</i> ,	J. D. LEGARE, <i>Rec. Sec.</i>
Dr. JOS. JOHNSON, <i>Vice-Pres.</i>	AUG. WINTHROP, <i>Trea.</i>
Dr. H. R. FROST, <i>Cor. Sec.</i>	

Standing Committee—James Cuthbert, Rev. Mr. Backman, Judge William Johnson, Robert Hume, Dr. Isaac A. Johnson, Dr. James Moultrie, jun. Joel R. Poinsett, and the officers of the Society, *ex-officio*.

A large number of applicants were admitted members. Reports from the several Committees were made. The Chairman of the Committee on Fruits made a verbal report:—the season for fruit has but just commenced, and he will not make a written one before the close of it. The Chairman of the Committee on Flowers, made the following:

“The Committee of the Horticultural Society on Flowers respectfully report, that they have endeavoured to discharge the duties assigned them by the Society, in examining such specimens of flowers as were sent them, and in visiting the gardens of such persons as expressed a desire of exhibiting to the Committee their choicest flowers. In consequence of our very unfavourable season (the flowers having been retarded by an unusually cold spring, succeeded by drought, and recently by heavy rains) the gardens did not present as flourishing an appearance as in former seasons; still, however, the Committee are happy to state, that under all the disadvantages of the season, a number of very choice and beautiful flowers were exhibited to them. There are no doubt a number of fine gardens in the city and its suburbs which the Committee had not an opportunity of visiting; several persons who have for many years cultivated flowers and ornamental shrubs were not sufficiently acquainted with the Rules of the Horticultural Society, to be induced to invite the Committee to examine their gardens, although they have evinced every disposition to contribute all in their power to cultivate and improve the taste for ornamental gardening, and the Committee have no doubt but that in proportion as the objects of this Society become better known, a greater number of individuals will be found who will cheerfully co-operate in favouring its views and advancing its interests.

"The individuals of whom, in the opinion of the Committee, honourable mention ought to be made and who are entitled to such rewards as the Society may decide on, are the following:

"Mr. James Nicholson, the best bed of Hyacinths.

"Mrs. (William) Johnson, the finest Tulips.

"Mrs. Eliza C. Cochran, the finest show of Roses the Committee ever inspected; she having had 47 kinds in bloom during the present season.

"Mrs. Eliza C. Cochran, the finest Amaryllises

"Mrs. Johnson and Mrs. Cochran, also both cultivated a number of very beautiful Carnations.

"Some of the shrubs and bulbs, however, mentioned above, were not in bloom until after the month of May, when premiums were to have been awarded, and as several of our finest flowers will not be in season for some weeks to come, it is respectfully suggested that the field be still left open for competition until the end of the season of flowers.

"In coming to a conclusion, your Committee cannot withhold an expression of their belief, that under the incitement to competition which this Society is calculated to produce, a taste for the beauties of Flora will be more cultivated. Our climate is peculiarly adapted to most of the finest flowers. Nearly all the plants of China and the Cape of Good Hope, may be cultivated without difficulty in our open gardens, and from our own woods and fields a selection may be made of trees, shrubs and flowers that form the ornament and pride of the gardens of Europe and of the Northern States of our own country. Most of the finest Magnolias, as well as the *Liriodendron Tulipifera* or Tulip Tree, *Franklinea*, *Pinckneya*, *Vaccinium Arborea*, and some of the most splendid flowering trees in the world are natives of our State, and may be cultivated without difficulty. The *Calicanthus Floridus* (Sweet Scented Shrub,) the *Chionanthus* (Fringe Tree) the *Gelseminum* (Yellow Jessamine), several species of the beautiful *Azelias* (Bush Honey Suckle) the *Lobelia Cardinalis* (Cardinal flower) the *Liatris elegans*, the *Gerardias*, and a large number of very beautiful plants are found flourishing in their native woods within a few miles of our city; and from these, without much trouble or expense, a collection might be made which would render our gardens and public walks as ornamental as those of any country. In an attention to these employments healthful exercise would be produced—a taste for the delightful study of botany would become more generally diffused, a recreation afforded for many a leisure hour, and an additional charm be thrown around our lives.

"All of which is respectfully submitted by the Committee."

Among the fruits presented was a branch of the paper mulberry, (*Broussonetia papyrifera*) with ripe fruit on, sent by Mr. Noisette. On observing which, the Corresponding Secretary, Dr. H. R. Frost remarked, that Mr. Noisette had made use of the males which were quite common in our streets to inoculate the female plants on, and had been very successful.

Mr. J. D. Legare, made a few remarks on the several specimens of vegetables, which he had sent to the Society. He observed that the Kohl Rabi, although quite common in Europe, was but little, if at all cultivated among us, they had been this year by him for the first time, and he was satisfied that they would prove an acquisition to our table, the flavour resembled the inner and more delicate part of the head of the cabbage, or rather the white stock enclosed by the head, perhaps a little more delicate; he understood that they were properly a winter vege-

table—the seeds of the specimens which were on the table were sown in March, and they had to contend with excessive drought whilst young, and latterly with heavy falls of rain, which they appeared to withstand fully as well, perhaps, better than any of the cabbage tribe; some of them had reached the size of near 5 inches diameter, which was large enough for any purpose—he had reserved some of the seeds and he hoped to be able to state hereafter, to what size and perfection they would attain during winter. One other fact he would state relative to them, and that was that they are as easily transplanted as the cabbage, taking readily and growing to a good size. Some of the best specimens on the table were from those transplanted.

The Tree Onion he strongly recommended to the attention of the Society. It possessed many properties which would make it valuable to us. Among these, was its producing the small bulb instead of seed, which, could this onion be successfully introduced, (of which he had now no doubt although many had failed in attempting its culture) would save us the amount yearly spent for onion sets imported from the North, and would moreover enable us to plant them out earlier and of course have them earlier for our table. Another good quality was, that the onion which produced seed or sets was not spoiled by this, the stalk growing at the side instead of through the centre of the bulb, and the same onion could either be used for the table after it had produced seeds, or be again planted for seed—they were as early as the common varieties. Respecting the Yellow Mangold Würzel and Sea-kale Beet, he, as yet, could state but little, the first was sweet but not more so than the common Beet, the latter resembled what had been sent him as the Swiss Chard.

The President presented a melon of the Cantalupe variety, he observed that the last year they were remarkably fine, but he feared this year there would be a total failure owing to the great quantity of rain which had fallen. Dr. Frost stated that some new varieties of melons had been introduced from Italy by Dr. Holbrook among which was the Velvet Melon, that they were then growing in a garden in the city and promised to be very fine. J. D. Legare remarked, that it was certainly preferable to attempt the introduction of melons from the south of Europe or other warm climates. It appeared to him from all the experiments he had made (and they had been both on fruits and vegetables) that all plants coming from a northern to a southern climate required as much to be climatized, as those which were brought from a southern to a northern one. In an article he had written for the *Agriculturist*, he had stated some experiments he had made on melons, the seeds of which were imported from England, the result was, that although they produced many vines and were at first luxuriant in their growth, yet they did not mature a single fruit. He was led to believe from that circumstance, connected with others with which he was acquaint-

ed, that plants raised from seeds grown in a northern climate, would not do well the first year in a southern one, although originally from a warm climate. The opinion which he then advanced, had been confirmed by this year's experience. He had imported from England seeds of some of the finest Persian melons, introduced there from Persia, by the Horticultural Society. Although slightly forced in the first instance, to get them to fruit early, (before our hot weather became oppressive,) yet he had scarcely succeeded in obtaining a single fruit from each vine, some had produced none, and those which he had obtained were small, not well matured, and of very inferior flavour, not resembling the descriptions published in the Transactions of the London Horticultural Society. Cucumbers from England also did not produce fruit as well the first year as afterwards—Mr. P. S. H. Lee remarked, that he had growing in his garden a variety given to him many years ago as the Smyrna melon, the seeds had lain by him for five years, and were cultivated after this lapse of time with success. The fruit was large, and of oval form, the cavity left for the seeds was very small, about 2 inches diameter, whilst the flesh was 3 inches in depth. The flavour was very fine. The wet weather had nearly destroyed the whole of them, and he had not been able to present a specimen as he intended. The seeds, would, however, be carefully saved and distributed among the members.—The President related an experiment he had been induced once to try, to save his melons from rotting, which sometimes occurs from their contact with wet earth. He placed a parcel of them on tiles, whilst others were left on the ground. When they were mature, to his surprise he found, that those which had had tiles placed under them, were perfectly tasteless, whilst those on the ground retained their flavour.*—Mr. J. Michel observed, that having some very fine melons, he was very desirous of saving them, and was advised by a neighbour to place under each a piece of pine bark; he did so, and succeeded perfectly, not one rotting, they moreover, retained their fine flavour. Whilst up he would observe that his experience confirmed what had been stated by Mr. Legare, relative to the effect of a warm climate on melons brought from a more northerly one. He had several times attempted to introduce them from France, but had almost always failed.

A paper "On the hastening of the maturity of figs, by the application of oil," by the Secretary, J. D. Legare, was then read. He stated in detail the experiments he had made. The conclusions which he drew from them, were, 1st, that figs may be matured 14 days earlier by the application of oil to their flower ends than

* This tends to show that, however, advantageous this process may be in a cool moist climate, it will not in a warm one. Bark, wood, or any slow conductor of heat will answer perhaps better, the object is to keep the fruit from being constantly in contact with moisture.—*Ed. So. Agr.*

when left to ripen in the natural way on the tree. 2. That merely touching the apertures of the flower end was of more service than oiling the whole fruit or even the whole flower end. 3. That the figs should be *at least* 1 inch diameter, but $1\frac{1}{2}$ inch was preferable, all below these sizes being injured by the application of oil. 4. That all the fruit touched with oil would either mature or fall off in the course of 14 days from its application—finally, that all of the fruit on a tree ought not to be oiled at the same time, but only those which are of proper size.* Major Lee and the Rev. Mr. Bachman respectively stated that from the success which had attended Mr. Legare's first experiments, they were induced to try the effect of oil on the fruit of their trees, the results were in accordance with those stated by him.

The process of caprification (practised in the Levant,) as stated by some ancient author, was given by the President, he understood that it had been revived by a late traveller (Bidgelow) the process stated was the same, it consisted in taking branches of the wild fig, and hanging them among the branches of the cultivated varieties—from these issued innumerable insects, which punctured the fruit, and deposited their eggs there. This occasioned the fruit to swell and mature, which they would not do in such quantities were this neglected. He then entered into an analysis of the word caprification, in which he was followed by Major Lee.

Dr. Isaac A. Johnson observed, that he was induced to make some remarks relative to the culture of the Fig tree, in consequence of the observations offered by the President respecting that plant, showing that the fig tree of the Archipelago (*Ficus Carica*) is matured much earlier and rendered more prolific in consequence of the peasants, who make a business of it, bringing branches of the wild fig-tree in the spring which they spread over those of the cultivated tree. This process is called caprification, and is well described by Tournefort. We are aware that the fig belongs to the class Diœcea, consequently we must expect to find the polliniferous or staminate flowers upon one individual, and the pistillate on the other; and, as the fertilization of the fruit depends upon the timely application of the nutritious polen, the fruit must, without it, either fall off immatured or be of diminished size; this is obviated by the process adopted by those cultivators, and is effected in a singular manner by a small insect of the genus *cyrips* which is continually flitting from fig to fig, covered with this polen which she has robbed from the anthers of the wild tree, while descending into its cavity (within which these flowers are curiously arranged) either in search of food or, as is supposed, to conceal her eggs, and deposits upon the stigmas of the pistillate flower. Much judg-

* This paper will hereafter be published in the *Agriculturist*.

ment and skill no doubt are necessary in the adaptation of this plan.

From what he had stated it appears evident that the fertilization of the fig, depends, upon the application of the *pollen*, and not as has been supposed, upon the punctures (which was suggested) made through the integument of the fruit.

He also took that opportunity, to remark that he had observed that the leaf or first crop fig contained *Stamens* and *Pistils*, and that the second crop from the same tree bore *Pistillate florets* only, and suggested that we should follow up the inquiry, feeling confident, that by a proper care of the leaf fig, we should be able to obtain plants from them, and, probably of their original character, he made these observations with the Leamon fig as it is called.

He had had an opportunity of observing the good effects of Mr. Legare's method of applying the oil to obtain the early maturation of the fig; and thought very highly of it, he had little doubt but that the same application may be made to advantage upon other fruit, whose calyx is superior as it has the effect of not only preventing the escape of the perspirable fluid, and thus facilitating their maturation, but also excludes insects; and, by bringing them forward early may be plucked before the insect makes its appearance."

Judge Johnson next followed:—

"If it be true that the want of the wild fig-tree among us, is the only cause that prevents our curing figs, then I flatter myself that, partially at least, the difficulty has been removed by our recent experiments in forcing the fig by means of what I will take the liberty of calling oleagenation. Caprification is universally treated as the means resorted to for forcing the fig, so as to make a whole tree ripen together, or at intervals suiting the convenience of gathering and curing them. Now oleagenation distinctly subserves the same purposes. The question will have to be decided whether the profit will pay for the labour. Great use appears to have been made of the fig in ancient agriculture, both ripe and cured, as we may judge from the geponic writers, and if we may judge from a passage in Cato, it constituted a part of the provision of their slaves. Certain it is that it may be turned to excellent account in contributing to the comforts of our slaves; it is so easily propagated, so safe in point of health, and in certainty of production exceeds all other trees; I think I might add in quantity of fruit also, and even in durability. Many medical uses also were made both of the bark and fruit; the milk was a substitute for cantharides, and the leaves afforded a black dye.

"But on the subject of curing figs I am inclined to think that the moisture of our atmosphere, and at present, the superior productiveness of many articles of agriculture, are insuperable obstacles. I have succeeded perfectly in curing figs by placing them under glasses exposed to the sun. It was the large brown kind on which I made the experiment. The modern mode of curing them is, I find, to place them in single layers in shallow baskets, which at night and on the approach of rain, are piled one upon another, and covered on top by an empty basket. This is an improvement on the ancient mode which was to distribute them on scaffolds, made of poles or laths, with a preparation for covering them, by means of mats, so arranged as to cover them with ease and expedition—all making the exclusion of moisture a *sine qua non*.

"On the subject of caprifications, I would remark that the practice is one of high antiquity. The word, it is obvious, is of Latin origin, but there is reason to believe it was practised by the Greeks, for we find the word caprification in that language and very old authority for it. The Latin husbandry we know was made up like their mythology from the conquered countries. Carthage, Gaul and Greece contributed to it; the former largely.*

"The old book to which the president alluded, was probably Tournefort, and the very serious and scientific attention bestowed by this author on the subject, leaves not a doubt in his time, it was the practice in most of the Greek islands, where he wit-

* "*Of Wild Fig Trees and of Caprification.*—There is a kind of wild fig trees which the Latines call *Caprificus*, that never brings any fruit to maturity; but that which itself bath not, it procureth to others, and causeth them to ripen. For such is the interchangeable course and passage of causes in nature, that as this thing putrifieth, that engendereth, and the corruption of one is the generation of another. By this it comes to pass, that the wild fig tree breedeth certain flies or gnats within the fruit thereof which wanting nourishment, and not having to feed upon in those figs, because they become rotten and putrified as they hang upon the tree, they fly into the other kind of gentle and tame fig trees, where they settle upon the figs, and greedily nibble thereupon until they have made way and pierced into them; and by that means let in at first the breath of the warm sun, and that comfortable and vegetative air besides that helpeth to ripen them. Soon after they suck up and spend the milky humor which they find there, and which keeps the figs still as it were in their infancy, and hindreth their speedy and timely maturity. True it is, that the figs in time would ripen of themselves by the power and benefit of nature only. Howbeit skilful and industrious husbandmen take order always to set these wild fig trees near to the place where other fig trees grow, but with due regard to the wind side, that when the foresaid gnats break forth and are ready to fly out, a blast of wind might carry them to the other. And whereupon came the devise and intention to bring whole swarms and casts of them, as they hang one to another, from other places, that they may settle upon the figs to consume the raw moisture within. Now if the soil be lean and hungry, and fig trees growing thereupon exposed to the north wind, there is no such need of this help: for the figs will dry sufficiently of themselves, by reason

nessed and studied it. The rationale which he gives of it differs from that of Pliny, and has a strong support in analogy. There are a thousand instances in which the wound of an insect produces precocious ripeness. Nature, which intended that fruit for that insects subsistence, has given it the instinct and faculty of hastening that state which is necessary to the end proposed. The same effect is seen in a thousand instances in which a vegetable worm is necessary to animal procreation. Of which I would humbly submit the quere, whether all the fungi are not specimens. Are not living insects always found in them in an advanced state of their existence? Always, I believe, in the edible mushroom.

"I would here call the attention of the Society to one proof of the identity of the *modus operandi*, or resemblance between effects of the puncture of an insect and the application of the oil to the fig. Uniformly the oil produces something like a paralysis at the point at which we apply it. All other parts are swelled juicy and well flavoured; but the resemblance at that point is to a scabbed or inert surface. A wound is produced by the insect, and death is the effect of the oil. The part is dry, closed, withered and tasteless. I could almost be tempted to draw an analogy between this operation, and that so cruelly practised upon animals to produce a morbid enlargement of the more delicate parts, the effect of fever and morbid secretion, soon followed as in the fig by dissolution.

"Tournefort's exposé of the rationalé of caprification, is that the wild fig propagates and preserves through the winter the insect which when brought in its boughs and suspended on the orchard-figs in early spring punctures and matures it. It has been now suggested by one of our members whose researches in botany are known to be respectable, that the insect is made the porter of the farina of the male to the female fig, and thus it operates to hasten maturity. The inquiry is a curious one and it behoves us to follow it out.

"The process of oleagation is not new, although comparatively so to us, it is said to have been long practised in the gardens of Paris, and along with it another practice which illustrates and seems to support the idea that the effect is produced by morbid excitement, or disease produced in the organs at the

as well of the situation of the place, as the cliffs and rifts in them, which will that which the gnats or flies above named might perform. The like effect is to be seen also where much dust is, namely if a fig tree grow near unto a highway much frequented and travelled by passengers. For the nature of dust is to dry and soak up the superfluous moisture of the milk within figs. And therefore when they are thus dried, whether it be by the means of dust, or of the sail flies feeding, which is called caprification, they fall not from the tree so easily, by reason they are discharged of that liquid substance which maketh them both tender, and also ponderous, weighty, and brittle withall.—*Pliny, part 1. b. 15, ch. 19.*

bud-end of the fig—that is, the wounding of them there with a straw to hasten their maturity.—*Rees' Cyclopædia.*

“The author of the ‘*Nouveau Dictionnaire d'Histoire Naturelle*,’ is disposed to treat caprification as a ‘vulgar error.’ But there is very little difficulty in reconciling all he says with all that has been said by the learned naturalists who preceded him. Because the fig may be matured without caprification, it does not follow that its maturity may not be hastened and rendered uniform and convenient by means of it. Agriculture is the science of experiment, and if it be true, as Tournefort asserts it, that in actual practice, the cured figs obtained from a tree are increased from 25 to 250 pounds, it is in vain to look further for its eulogy, or vindication. Nor is it to be rejected because as Olivier asserts, it is unknown or unpractised beyond the Greek islands, nor even from its gradual decline there unless it can be shown, that no diminution of productiveness has resulted from its discontinuance.

“I certainly was under the impression, I confess, it had been discontinued or exploded, but it would seem otherwise from the notice taken of it in a late traveller.

I will conclude with an observation on the etymology of the word. *Caprificus* is rendered in the dictionaries by the *wild fig*, and it is a mistake to suppose that the operation called caprification, takes its name from the practical use made of it, as appertaining to ‘the loves of the plants.’ It is no doubt a distinction of inferiority, as we say *hog-potato*, *bete-rave* *bull-grape*, &c. The fruit is not fit for the use of man as an article of food, and I doubt from its description, if even the goats would eat it, yet, literally, it means the goat fig.”

The discussions were then closed for the evening, and after partaking of a collection of fruit furnished by the several members, the Society adjourned.

PART II.

SELECTIONS.

ART. I.—On Breeding for a Dairy Stock.

[FROM THE NEW-ENGLAND FARMER.]

Mr. Fessenden,—The subject of breeding for a Dairy Stock, is one of a good deal of interest at this time. Inquiries are frequently made in conversation which show this to be the case. In the present state of our knowledge such questions as the following appear to the writer not at all too elementary.

1. What is meant by a particular breed of cattle?
2. Are there one or more breeds of cows known, by long trial, to be deep milkers?
3. To what extent is breed to be relied upon in the selection of a stock for milk?

I propose to make a few suggestions by way of answer to these questions.

There is another which I shall say something upon in another paper with your permission, viz.

On what else, *besides breed*, depends *deep milking*?

It is nothing new to say that the object of breeding (in a technical sense,) is to perpetuate in the progeny, the form, constitution, and particular qualities of one or both the parents. But what I wish to ask attention to, and to enforce, in this communication, is the very important fact—that the longer any distinguishing quality, mark or peculiarity, can be traced back in the ancestry, the more deeply will it be fixed in the descendants; predominating, or taking the place of other qualities of more recent standing in either of the parents.

A particular cow may chance to be a fine milker, but if the parents, for some generations were not remarkable in the same way, her heifer calves will not probably be good milkers—at last no dependence can be placed upon them. If the sire is of a pure milk stock the chances are very much increased of course.

It is not too much to say from experience, here and in England, that of all the varieties of cows, designated by the terms, short-horned, long-horned, and hornless—or by the names, more limited in their application, as Devon, Hereford, Holderness, Suffolk, Denton, Bakewell, Alderney, &c. no one of them has been found to give *uniformly or generally*, more or better milk

than any other. The evidence before the public, abroad and at home, is contradictory.

There have been individual instances of extraordinary milkers among all—and I may go so far as to say *families*, of extraordinary milkers, among all.

It has been too often taken for granted, that a good cow will produce good calves without inquiry into her parentage or that of the bull to which she is sent—and prejudices have been raised in favour of marks and certain appearances, in such an animal, which have no necessary connexion, or none at all, with her faculty as a milker—and such marks have been allowed to determine the choice of another cow as infallible signs of a good one. The most prevalent popular token now is the *small head and short horns*. This is so far a good sign, as that the smaller the refuse parts, the nearer will be the approximation to perfection in the more valuable parts, whether for beef or milk—and this is all. So much has been most satisfactorily proved by the conclusive reasonings of Mr. Cline, the eminent anatomist, in an essay published by him a long time since.

The *Holderness Breed* have the *small head and short horns*, but they are esteemed in England much better fitted, in general, for the shambles than for the dairy. An established dairy stock might, no doubt, be raised from them by a careful selection of individuals, *male and female*, from a milk family. But it would be too much to say of so large a class as the Durham, Denton or Hereford, though all *short horns*, that bearing either of those names, they may be relied upon as good milkers, and to produce uniformly good milkers.

If the experience of the country will not bear the writer out in this remark he will be glad to find the dairy stock so much in advance of his opinion.

The Devon cows are not considered in England to be so good for milk as some other kinds. And yet Mr. Coke the great Norfolk farmer, sent to a friend in Maryland, several years ago, a number of Devonshire cows, bred by himself, which were remarkable for quantity and quality of milk. They were bred on the side of both male and female, we presume from animals whose progenitors were distinguished for this same quality: had he frequently crossed the blood of the Devons with any of the several kinds of short horns, whose descent, from an equally good stock for milk, had not been so well guarded, this same family would in a few generations have given evidences of material depreciation.

The truth really is, that we have yet the work to do to establish a pure milk breed.

To accomplish this, we must have a class of farmers who shall be *professed breeders* of a dairy stock—they will employ no bulls but such as come of good cows, they will raise no calves

but from first rate cows. They will keep the heifers for some generations, sending off to the butchers such as turn out indifferent milkers; as some there will be, in whom the faults of remote parentage will be found to linger.—A herd thus carefully purged, and finally, after a few years, exhibiting a uniform character *for milk* in the young, as *they come in* will prove a lasting and sure source of increasing profit to the skilful, intelligent breeder, and an immense gain to the country.

The writer would ask, suppose a young farmer at the present moment is about to stock a milk-farm and is willing to pay the full value of *good cows*—good, we mean *as breeders*—where shall he go for them, in New England? Where shall he be sure to find an established milk breed that will not disappoint him? He will find *improved* breeds enough—but who will venture to insure him that the improvement will not be found to consist as often in adaptation to the shambles as to the dairy?

The idea suggested, whether well or ill founded, let others judge, is that we have not yet a pure *milk-stock*, that is, a stock descended for many generations from none but fine milkers. Some may think that the art of breeding cannot be carried so far as to secure a uniformity of excellence in this particular quality in the progeny. The answer can only be that they have attained to that degree of perfection in England—that for half a century *thorough breeders*, have been successful in this particular as in others. It is gratifying to be able to state any one thing on this most important subject, entitled to rank as an axiom, and of a truly scientific character.

We say that thorough breeders have been entirely successful in England. Not that the farmers, generally in England have reached that degree of excellence. This would be far from the truth. All that is true even there, is the invaluable fact that particular families of milch cows are there known to transmit their peculiarity, as great milkers, with uniform certainty, to their progeny. This fact is as valuable, for our instruction and example, as if the same thing were true of all the milch cows in England. On the other hand, let the following statement have its due weight, going to show, as it does, that it is of some consequence for breeding from what family an animal derives its descent. ‘Mr. Woodward of Burlingham, Worcestershire, England, purchased *twelve deep milking Yorkshire cows without pretensions to breed, or disposition to fatten*—with these cows he used a high breed Hereford Bull—and in the progeny lost the disposition to milk which the mothers had; acquiring that of laying on fat, which was the distinguishing merit of the family to which the bull belonged. Here is a striking case, where *high blood* enabled one of the parents to propagate his own peculiar excellence, and to prevent the transmission of the peculiar excellence of the mothers, viz. their tendency to

be great milkers; because this quality was accidental in them and not derived from a select ancestry, and therefore not firmly established in the constitution.

ART. II.—On the Manufacture of Cheese.

[FROM THE NEW-ENGLAND FARMER.]

Mr. Editor,—If you think the following answers to the questions in the New-England Farmer, vol. ix. p. 313, are worth publishing, they are at your disposal; they are compiled from various publications and the underwritten opinions of those experienced in the manufacture of Cheese. There are, no doubt, some errors; and the compiler would be highly pleased to have them pointed out on the good of the public.

Windham, (Con.) July, 1831.

1. *What effect has it on milk, in hot weather, if it is much agitated and heated in the udder, by the cow's being driven a long distance, or running about?*

It greatly injures the milk; it is very difficult to make it into cheese, and instead of one hour (the time very commonly given by dairy-women in bringing the cheese) it will frequently not come in 3, 4 or 5 hours, and then in an imperfect state; and when the cheese is released from the press it will heave or puff up.

2. *Which is the best method to keep milk sweet over night in warm weather?*

Set the milk in small brass, or tin vessels, and put one table spoonful of fine salt to each gallon, and pour in some cold water according to the heat of the weather; let the milk stand where there is a free circulation of air. In the morning take off the cream and mix it thoroughly with the warm morning's milk.

3. *Which is the best method to preserve rennet skins?*

Let the calf suck about 11 hours before it is killed. Take out the maw-skin, and let it lie three hours in a cool place, then empty the maw, (let no water touch it,) and rub it well with salt on each side, and afterwards cover it with salt and put it in a bowl; turn and rub it every day for about three days, then open it to dry, being stretched out on a stick, that it may dry regularly.

It is of great importance that the maw skin be well prepared; good cheese cannot be made with bad rennet. It is reckoned best to be one year old before used; it will fetch more cheese,

and it is said the cheese will be milder. To prepare the rennet, make 2 quarts of brine that will swim an egg; when the heat is gone off to about blood warm, put it in one maw-skin cut in pieces, let it steep two days (48 hours) then strain and bottle it.

4. *What quantity of new cheese will one rennet skin produce?*

The average of 250 lbs. (some produce 600 lbs.)

5. *How many quarts of milk (milk measure) will produce curd for a cheese which will weigh 15 lbs. from the press?*

Forty-five to 60 quarts, according to the richness of the milk.

7. *What will a cheese which weighs 15 lbs. from the press shrink the first five months after it is made?*

Near three pounds. (A cheese which weighs 24 lbs. green, will shrink 4 lbs. in five months.)

7. *What degree of the thermometer should be the heat of the milk when the rennet is put in?*

From 80 to 90, according to the heat of the weather, and the quantity of milk. (The smaller the quantity of milk, and the cooler the weather, the hotter should be the milk.)

8. *What is the effect if the milk is too hot when the rennet is put to it?*

The cheese will partake of the elastic or springing quality of a sponge. It leaves it in a very tough state. It inclines the cheese to heave and be strong. The whey will look green and then white; it spoils the cheese.

9. *What is the effect if the milk is too cold, when the rennet is put to it?*

It will hardly come at all, and it is not easy to separate the whey, and is in danger in warm weather of souring. The cheese is apt to cut chisselly and break and fly before the knife.

10. *How long time shall be allowed after the rennet is put to the milk to cause it to turn to curd fit for the cheese knife?*

One hour in warm sultry southwesterly weather, and not less than one and a half hour in clear northwest weather.

[Cheese will come in warm weather quicker than in cool, with the same quantity of rennet, as it does not cool so quick. When the whey looks blue, the curd is fully formed and the whey may be carefully separated.]

11. *What is the effect if the curd is stirred, or broken too soon?*

The rennet will not take full effect. It will cause slip curd, which will never make good cheese. The cheese will be unsettled and ill flavoured. The whey will be rich, and the cheese poor.

12. *What is the effect if too much rennet is put to the milk?*

The cheese will be rank, or very strong, and is liable to heave and spread.

13. *What is the effect if too little rennet is put to the milk?*

It works too slow, and is liable to become sour in warm weather.

14. *What kind of salt is best for cheese?*

The very best of Blown Liverpool salt.

Some prefer the best of Rock or Turks Island salt, washed and ground.

15. *What quantity of salt should be put to the curd which will make a cheese weighing 15 lbs. from the press?*

About six ounces. (If a cheese of 15 lbs. is salted when turned in the press, and afterwards put in a brine 15 hours, 1 oz. of salt to the curd will be sufficient.)

16. *What is the effect if too much salt is put to the curd?*

The cheese will be hard, dry, poor, and warty.

17. *What is the effect if too little salt is put to the curd, or is it not well cured in brine?*

The cheese will taste strong, be liable to heave, spread and will not cure well.

18. *What is the effect if cheese is not sufficiently pressed?*

The cheese will crack, leak, mould and rot.

[Press the cheese gently at first, and advance gradually to the utmost power of the press. If cheese is not scalded right and well mixed, we cannot by pressing make it firm. If cheese is pressed too much it is apt to be hard and poor.]

19. *Why does American cheese dry sooner than English when it is cut open?*

Whether it is because they mix a little saltpetre with the salt, or cure them in brine, without putting much salt to the curd, or it is caused by adding suet to the curd, I have no means of knowing.

20. *Can as good cheese be made upon a farm on the seaboard as in the interior?* (See N. E. Farmer, vol. ix. p. 326.)

No doubt, if the manufacturer has as much experience and skill. (Those living near large towns where fresh butter bears a high price, are strongly tempted to skim the milk, before it is made into cheese.)

General remarks on Cheese Making.—It is recommended to have the milk in the tub measured with a guaging rod, the salt weighed, the rennet measured, and the temperature of the milk when the rennet is added, determined by a thermometer; if there was less guessing about making cheese, there would be less poor cheese made.

Skimmed cheeses do not require so much scalding as new milk.

If curd for cheese is not well scalded the cheeses will look warty, spread and leak; scald the curd rather more than is generally practised, and then *cool it in cold water*, the whey will work out more readily. If cheese is put into the press warm, it is apt to puff up, and be strong.

Sour curd will not make good cheese, and sour milk should be given to the swine, cheese made of it would be hard, crack, leak, and be wrinkle coated.

Scalded milk makes rich cheese.

The practice of colouring cheese and butter, we think, should be discouraged; who would thank a milk man to colour his milk?

As to cheese hoops for a middling size cheese, let the height be about two-thirds of the diameter; for small cheese, let the height be about half the diameter.

Be careful that the room, where rich new cheese is kept in hot weather, be not too warm.

The whey may be let off when the curd is sufficiently formed by a plug at the bottom of the tub; placing something over the hole to keep the curd from stopping it.

ART. III.—*Hints on the most Economical Manner of Feeding Horses.*

[FROM THE QUARTERLY JOURNAL OF AGRICULTURE.]

To economise the food of working animals, must be admitted to be an object of great public and private importance. The practices of different parts of the country are not all alike perfect in this respect. In Scotland, which is behind no country in general agricultural improvement, there is yet much to be learned in this branch of rural economy. In the general management and economical methods of feeding horses, Scotland, generally speaking, is greatly behind England; but in England itself, the most approved practices are not always generally known, or universally adopted.

A great variety of articles, as every one knows, are employed in the feeding of horses; of grains, there are oats, oatmeal, barley, bran; of leguminous plants, there are beans and peas; of roots, there are the potato, the turnip, the carrot, and the parsnip; of dried grasses and other plants, there are hay, saintfoin, clover, ryegrass, and straw; and, occasionally, other substances, as oil-cake.

In North Wales, where a scarcity of hay is often much felt during winter and the early part of spring, the gorse, or furze, is frequently employed to feed both horses and cattle. It is prepared for that purpose by being bruised by small watermills, and, when mixed with a proportion of oats, or chopped or cut hay, it is found to be a strong and nourishing food for the horse. This plant is also similarly used in several districts of the county of Devon. And, in Scotland, where the furze or gorse abounds in many places, such a practice might be adopted with great advantage.

Of the different kinds of grain given to horses, the oat is found to be the best adapted to support the strength and spirit of the animal. Amongst roots, the carrot and the parsnip are much

valued; but these, although they contain more saccharine matter than the potatoe, and although probably equally nutritious, yet, as they require greater nicety in their cultivation, and a richer and deeper soil, they cannot be so universally and cheaply raised, and in such large quantities, as the potatoe. The latter, growing in almost every soil of this island, may be said to be the most useful of all this class of plants, for the feeding of the horses.

In feeding with potatoes, however, one precaution should never be neglected, which is to steam or boil them before using them. The giving the potatoe in its raw state to the horse, has been fatal to numbers of these valuable animals, especially when on hard work, and overheated by violent exertion. In its crude state, the potatoe is exceedingly apt to ferment in the stomach of the horse.

In the feeding of the horse with grain, whatever be the kind given, it should always be bruised; or, what is better still, coarsely ground. The hay, too, ought to be cut into small lengths, not exceeding half an inch, nor less than a quarter of an inch; and a quantity of straw, cut in like manner, should be mixed with it. For the purpose of bruising the grain, and cutting the hay and straw, simple machines have been invented, which can be obtained at no very considerable cost. In Scotland, where thrashing-machines are universally employed, it is recommended that the machinery, for the purposes referred to, should be attached and moved by the same power.

When the grain has been bruised, and the hay and straw cut, it will be necessary to proportion the quantity of each to be mixed together, and to make up a sufficiency of food on which a working horse may subsist for twenty-four hours. And, in order to illustrate this, we cannot do better than mention a few examples taken from the practice of stables, where this mode has been long and successfully followed.

In the stables of Messrs. Hanbury and Trueman, in Spittal-fields, where 82 horses are kept, the animals receive all their food in the manger, no hay being ever put into the rack. The stable, which is spacious enough to contain this number of horses, is one of the most perfect in all its arrangements in London, and being admirably well ventilated, disease rarely occurs.

The excellent health, condition, and general appearance of these horses, evince the goodness of the treatment adopted. They are fed in the following manner. Each horse receives in the twenty-four hours 18 lb. of cut hay and straw, the proportion of the latter being one-eighth; 14 lb. of bruised oats, and 1 lb. of bruised beans; making in all 33 lb. of food. In summer no beans are given, as they are then found to be too heating; but, in consequence of the beans being withdrawn, a small addition is made to the quantity of oats. Half a pound of salt is

given weekly to each horse. This being divided into two portions, one of them is given on Saturday night, the other on Sunday, and being so administered, the salt generally purges the animal. And on account of this effect, and as the animals received no boiled or steamed food, it is thought better, by Mr. Hanbury, to supply the salt in this manner, than to deal it out nightly in smaller quantity.

In another stable in Long Lane in London, belonging to Mr. Higgins, where above 300 heavy cart-horses are kept doing much daily hard labour, no hay is ever put into the rack. It is always mixed with straw, and cut down into lengths not less than $\frac{1}{4}$ th of an inch. The hay used is generally clover hay, with one-half of barley straw. The oats, barley, and beans, are always coarsely ground before being added to the cut hay. Although the quantity of hay, being 19 lb. for a very large horse, and 14 lb. for a very small one, given in the 24 hours, remains unaltered throughout the year, it is found advisable during the same period to alter the kinds and quantities of grain. In winter, a larger proportion of beans is given than of oats, the quantity being two-thirds of the former and one-third of the latter. As the spring sets in, the allowance of beans is gradually diminished to one-third, the other two-thirds being made up of barley, which grain is held to be more cooling for spring food. But in summer oats are substituted for barley. Of the mixture of these bruised or ground grains the large elephant size cart-horse receives 20 lb., the smaller animals 16 lb.; and, with the addition of 3 lb. of bran during winter, and 4 lb. during the rest of the year, every large horse thus receives in the 24 hours about 40 lb. of mixed provender, and every smaller horse about 33 lb. Salt is not given during winter, but always in other quarters of the year; an ounce being then daily mixed up with the other ingredients of the food.

In this last stable, as well as in all others, where the same system of feeding is practised, the following method of mixing up the materials of the food is observed. The cut hay is first laid on the floor of the barn or loft, over it the bran, next the bruised or ground beans, and lastly the other ground grain. All the substances are then tossed together, and, thus prepared, the provender is ready for use.

Although we have thus detailed the method of feeding cart-horses in some of the best managed stables of London, we are more inclined to direct attention to the plan followed by Dr. Sully of Wiveliscombe, in Somersetshire.* This gentleman has for more than 20 years, successfully pursued the plan of feeding which are about to detail. Its utility and economy are apparent, and we feel confident that it may be generally practised with advantage.

* See an interesting Letter of his in the *Sporting Magazine* for Nov. 1826.

Dr. Sully says, that his horses employed in his professional practice, and accustomed to travel at the rate of eight miles an hour, "from the great labour they undergo, have no sinecure place, and yet few people can boast of cattle being in better condition." In his stable there are no racks to hold the hay. He objects, and we think with the greatest reason, to the employing them. In the first place, the groom, if the stables are fitted up with racks, will always fill them, and by so doing tempt the horse to eat too much, thus overloading his stomach; so that when, in this full distended state, he is taken out of the stable and put to work, his wind will be endangered. And not only does the full hay-rack often occasion this injury to the horse, but it is the cause of great unnecessary waste of provender. It must have frequently been remarked by those who have entered a stable, that all horses, when they have the command of their head, pull the hay out of the rack and throw it under their feet. This is purposely done, that the more tasty portions of the hay may be selected for food, and the rest rejected. Few, if any, grooms will replace in the rack the hay that has been thus refused, and a great waste of it necessarily ensues. It is Dr. Sully's opinion, that a horse with a well filled rack will consume and spoil upwards of 30 lb. of hay in 24 hours. But when it is cut down and mixed with a due proportion of cut straw and bruised or coarsely ground oats, or other grain, 10 lb. are sufficient.

The details of Dr. Sully's manner of feeding his horses are worthy of imitation, combining, we conceive, convenience and economy of time and labour. In the loft above the stables, are prepared the portionable quantities of the food with which his horses are daily supplied, and a very simple method has been devised to convey it when mixed into the manger of each horse. A wooden pipe is made to pass from the loft into each of the mangers, and close by the mouth of the pipe in the loft is placed a tub of size enough to contain what is sufficient food for a horse for 24 hours. To prevent the horse, in searching for the grain, from tossing out of the manger the mixed food which is dropt into it, oaken cross-bars, 12 inches distant, are nailed over it. Between these bars ample space remains for the horse to feed.

As there can be no dependence on the measured quantities of grain or other food given to the horse, from the variation at times in the respective weights of equal quantities, Dr. Sully recommends, and indeed regards it as necessary, that grain of all kinds, and also the cut hay and straw, should be carefully weighed. When all the ingredients are so prepared, the proportions for each horse are allotted. From the table which follows will be seen the different articles of food, and the quantities and weight which the horses should receive.

	1st Class.	2d Class.	3d Class.	4th Class.
1. Farinacious substances, consisting of bruised or ground Beans, Peas, Wheat, Barley, or Oats,	5 lb	5 lb	10 lb	5 lb
2. Bran, fine or coarse, - - - - -	0	0	00	7
3. Boiled or steamed Potatoes, mashed in a tub with a wooden bruiser, - - - - -	5	5	00	0
4. Fresh grains (boiled barley,) - - - - -	6	0	00	0
5. Hay cut down into chaff, - - - - -	7	8	10	8
6. Straw cut down into chaff, - - - - -	7	10	10	8
7. Malt Dust, or ground Oil-cake, - - - - -	0	2	00	2
	30	30	30	30

With 2 ounces of salt for each class.

By this table it will be seen that each horse receives 30 lb. of food in the 24 hours, a quantity which will, in all cases, be found to be amply sufficient. The addition of 2 ounces of salt is necessary to assist the digestion of the food. All herbivorous animals, as is well known, in their wild state, indicate the necessity or utility of this condiment, by resorting wherever it is to be met with in those places where native salt exists. In the vast forests of America, where rock-salt abounds, those spots are called by the natives Salt-licks, from the wild cattle resorting to them to lick the salt. In Cheshire, and the salt district of that county, there is a farm which is noted for the excellence of its cheese. On this farm is a natural salt spring to which the cows daily resort, and by many it is believed that the tasting of this brine by the cows adds to the flavour of their milk.*

Of the four classes into which Dr. Sully divides his ingredients for feeding, those two which contain the steamed or boiled potato are the most recommended. No food conduces more to the healthy working condition of horses than the steamed or boiled potato; and we may observe, with relation to this, as well as to other kinds of food, that when the horse comes in weary and hungry, after a long day's work, it is necessary to fill his manger more copiously with the ingredients prepared for him.

In determining what kind of food shall be given to the horse, and in what quantity it shall be supplied, particular circumstances must often be allowed to operate. Violent and long-continued exertion, for example, will require the strongest food, and the largest allowance of it. It will be apparent, however, in the several instances before adduced of the most approved methods of feeding horses, that although these methods may differ in the kinds of articles selected for food, and in the quantities of the mixture given, they all agree in certain essential

* In the last Number of Journal, the value and uses of this important condiment are fully treated of.

points; and it is to these that we wish, in an especial manner, to direct the public attention. The methods it will be seen, all agree in the practice of invariably bruising or coarsely grinding the grain and beans, in cutting down the hay and straw, in giving no hay in the rack, in allowing salt, and in weighing each article separately, before mixture, in place of adopting the fallacious guide of measurement.

Having thus very imperfectly endeavoured to point out what is conceived to be the best method of feeding horses, it is unnecessary to dwell on the various advantages which such a system offers.

As the horse advances in age, his teeth gradually lose their perpendicular position, and become less fitted for grinding the hard food which the nature of his work, and his artificial situation in stables, renders it necessary for him to receive. His mastication is rendered imperfect, and the grain, when given him unbruised or unground, is often swallowed entire. And as the saliva and the gastric juice of the stomach are held to be the solvents of the food, and as more perfect mastication must allow these to act with more effect upon it, a more perfect digestion, we may believe, is induced by giving the grain in the bruised or ground state, and by the cutting down of the hay and straw. Thus, not only must the practice be conducive to the health of the horse, but it must produce a great saving of the food. To persons requiring constant and steady work from their horses, the advantages of the practice are very obvious.

The carrier, with his horse-provender weighed, mixed, put into a bag, and carried with him, can feed and refeed his horse at all times and places. The same observation applies to the farmer, and more strongly still to the post-master, whose horses have sudden calls upon them for great exertion. By means of provender so prepared, his horses soon fill themselves, and thus have time to lie down, sleep, and rest. To the gentleman and sportsman such a plan of feeding has also many advantages. The health of his horse is promoted, and the economy of its provender assured. The following are the words of the intelligent, humane, and experienced gentleman whom we have already quoted. "My business," says Dr. Sully, "extends through Somerset, Devon, Cornwall, Dorset, and Wilts. I travel with single horses on one pair of wheels, and, by relaying, I am enabled then to cover more ground with four horses than any man I know in England, besides my pace is seven and eight miles an hour, and my servant, who always accompanies me, generally puts in a bag of provender of coarsely ground grain, and cut hay and straw. I am certain the same plan will equally succeed with horses, coach or saddle."

Although we pride ourselves in Great Britain, and very justly, on the beauty and excellence of our horses, yet how superior

soever we may be in this respect to our continental neighbours, we do not surpass them in knowledge of stable-management. Those who have visited that portion of Switzerland which borders on Germany, must have witnessed the skilful manner of feeding horses. No grain is given to these animals without its due proportion of cut hay and straw. The hay-cutting machine is in very general use in this quarter of that delightful, romantic, and industrious country; and it is not only employed for the horse, but also for the cow. During winter, along with different kinds of roots, as the carrot, the turnip, the parsnip, chopped up, a quantity of cut hay is mixed for the cow. If we pass from Switzerland into Germany, we observe the same, and perhaps greater attention to the food of the horse. To all the grain he receives, a portion of cut hay and straw is always added, and, it may be remarked, that it is not uncommon, while on a journey, for the Swiss and German horseman to feed his steed, with coarse brown bread, half-a-pound or more at a feed.*

But it is unnecessary to go out of our own island for examples of good and economical modes of feeding horses; to the instances we have quoted, of the manner of treating them in certain stables in London, many more might be added; and if we travel the roads leading to the south from that great city, we shall find innumerable examples of the same good management.

S. M.

ART. IV.—On Rhubarb.

[FROM THE WESTERN TILLER, CINCINNATI.]

Sir,—As I perceive that the green stems of the Rhubarb plant have made their appearance in our markets, although in small quantities, I will with your permission make a few observations on the culture of this very palatable article.

There are several varieties of this plant, but the best is the Palmleafed or Turkey rhubarb, (*Rheum Palmatum*), and as the stems now offered in the market are of the right sort, I shall confine myself to this alone.

The sound of a Rhubarb pie or pudding does not seem very inviting to the uninitiated, especially if they have not heard any of their friends who have partaken of them, speak of these dainties with that *tenderness and respect* which we are all apt to indulge in when describing dishes that are agreeable to our own palates, but I can assure your readers that the article only requires to be better known, to insure it a general introduction into every family.

The stems are easily prepared for the pie or pudding, by stripping off the skin, commencing at either end, which slips off very

* It may be observed, that this latter practice is also common with millers in some parts of this country.

readily, and then cutting them into short pieces, about an inch long, they may then be used exactly the same as green gooseberries or quartered apples, and in making a pudding they should be inclosed in a crust, in the same way that is observed in making one of apples. This article makes a much finer pie or pudding, in my estimation, as well as in that of many others, than gooseberries; at all events it is far superior to such ineffable trash as green currants, which require their weight in sugar to sheath the vinegar or rather verjuice of the fruit, and which makes those who eat of the pie seem as if they were laughing on one side of their faces and crying on the other. Another advantage which the stems possess is, that they can be produced in market earlier than either of the above named fruits, and of course at a season when there is nothing else of this sort to be obtained.

It is the root of the same plant which when arrived at maturity, produces the article of commerce called Turkey rhubarb. In order to prepare the drug, the root must remain in the ground for three years, at the end of each term it is fit in this climate to be taken up, when it should be treated in the following very simple manner:—

On the side of the upper part of the root, called the heart or crown, are two or three and sometimes more offsets, which should be cut off and laid by in a cool place for planting the fibres or long disorganized parts of the root that strike off from the centre or crown, should then be cut off close to it and divided into pieces about three inches in length; these, as well as the crown, must then be peeled with a sharp knife and any unsightly or imperfect parts sliced off, after which the pieces may be laid by on a shelf and will in two or three weeks be fit to use as a medicine, which is in fact quite equal to the Turkey rhubarb, although not so powerful or active in its effect as the East-India, which is of greater specific gravity than either of the others.

The soil which is selected for the plantation should be a deep red land, moderately friable, and, if possible, should slope off to the north or north-east, as the plants in this latitude are very apt to grow too fast, and to arrive at maturity too soon, which makes the root rather light and porous.

There are large plantations of rhubarb in England, and as in that temperate climate the roots remain in the ground for five or six years, they become very large, and produce a finer article than we can hope to rival; but much may be done here by care and attention; and perhaps the plant may ultimately, and at no very distant period, become acclimated.

The plantation may be commenced either at the spring or in the fall, but the former is the best season; the ground should undergo a deep ploughing, and the offsets or plants be set in the ground about two or three inches deep, and about three feet

apart each way. A crop of potatoes may be raised the first year between the plants, without doing them any injury; in the second and third years the stems or side shoots, (not the leader or main stem of the plant,) may be cut for the table or market, and if done so in moderation the roots are not injured by it.

If the only difficulty with which I am acquainted, (the too rapid growth of the plant,) can be obviated, I have no hesitation in saying that a large plantation in the neighbourhood of this city must become exceedingly profitable; and at all events, I have the means of knowing that the sale of the stems, when their merits are properly appreciated, will not only cover the annual expenses incident to the plantation, but leave a handsome remuneration altogether independent of the amount that may be realized from the sale of the drug as an article of merchandize.

I alluded to the possibility of the root becoming in time acclimated; that this may be the case, I am strongly inclined to believe; and in your next paper, I will, with your permission, state my reasons for this belief, and furnish you with two or three instances that have come to my knowledge, which fully support me in the theory, visionary as it may appear, and in the mean time I remain, your obedient servant. D.

ART. V.—On Soap.

[FROM THE NEW-ENGLAND FARMER.]

As this is the season of the year when most of our housekeepers attend to making soft soap for the use of the family, we trust a few observations may be acceptable.

Much difficulty is frequently experienced in this business, and may *vulgar errors* have been connected with it; and we have heard women declare that they believed their soap was *bewitched*. When the principles are once understood, the whole process is easy and simple. First, then, it is proper that housekeepers should know the properties of the component parts of soap.

There are two fixed alkalies used in soapmaking, viz. potash and soda. Potash is called the vegetable, and soda the mineral alkali. Either of these alkalies will unite with grease and form soaps: potash and grease make soft soap only, but soda and grease make hard soap. Both these alkalies have a strong affinity for acids—uniting with them and forming what is generally called neutral salts. Thus potash and nitric acid form saltpetre; soda and sulphuric acid form glauber salts, and soda and muriatic acid, or spirits of salts, form common salt.

Now no woman in her senses would think of making soap with either of these salts; and yet the base of either, when separated from the acid, would form when mixed with grease, as good soap as if they had never been united.

There is another acid which combines with the alkalies, which will equally prevent their uniting with grease as either of the before mentioned acids—that is carbonic. Now this acid is continually floating in the atmosphere unseen, and will combine with potash or soda whenever it comes in contact, forming a carbonic of soda or potash—neither of which will unite with grease to form soap.

Much of the difficulty which housekeepers meet with in soap-making, arises from their ley having become more or less saturated with carbonic acid. Ashes which have laid long in a damp place, or become damp by any other means, will absorb carbonic acid, or if the ley is allowed to stand too long after it is leached in an open vessel, the same thing will take place. Lime is often placed in the bottom of the leach, and but few can tell why they do it. If the question is asked, the reply is—because it makes the ley cleaner. Lime has a stronger affinity for carbonic acid than potash has, and of course will separate it from it. Common lime stone is lime and carbonic acid: when lime stone is burned in a kiln, the carbonic acid is separated by heat, and quicklime is formed. Now if this quick or fresh-burnt lime is placed in the bottom of the leach and the ley made to pass through it, it becomes purified from the acid, and the only thing necessary then to have it unite with grease, is to have it of sufficient strength. This may be ascertained by its specific gravity—to learn which, put a new-laid egg into it: if the egg floats, the ley is strong enough: if it sinks, the ley must either be evaporated by boiling or by again leaching it through ashes. The grease made use of is the refuse fat of animals, and before it is united with the ley, should be freed from all the salt by boiling it in water. The quantity necessary for a barrel of good soap is about sixteen pounds, or half a pound to a gallon.

Soap when well made, should be thick and salve-like, capable of being spread thin upon cloth without flaking or rolling off. If to such soap about an equal quantity of soft water is added, the soap becomes hard and liver-like, capable of being taken up in the hand. This many think is desirable, especially the soap-boilers who make it for sale, as they make double the profit they would on the other quality.

Some housekeepers practise making their own hard soap. This is done by adding salt to the soap after it is well made, while it is yet boiling. The effect is thus explained. Salt is soda and muriatic acid. Potash has a stronger affinity for muriatic acid than soda has, and when they come in contact, as in this case, the potash decomposes the salt and combines with the muriatic acid, forming a muriate of potash—leaving the soda pure to form a hard soap with the grease: the muriate of potash will be found on cooling, in solution at the bottom, being of greater specific gravity than the soap. The salt should be added by small quanti-

ties until the separation takes place, which may be known by the soap becoming curdled; after which it should be allowed to stand until cold, when it may be cut into bars or cakes, as suits the operator. Many suppose that resin is necessary to harden the soap. This is not the case; it is used as a matter of profit—not of necessity.

The common yellow colour of soft soap is owing to the iron contained in it, as the oxide of iron is dissolved by potash. Where white soap is desirable, it may be made by substituting pearlash or carbonate of potash, and abstracting the carbonic acid by lime—and by using hard or other white grease, the purest white soap may be made.—*Genesee Farmer.*

PART III.

MISCELLANEOUS INTELLIGENCE.

Okra Soup.—The 27th Number of the *Genesee Farmer* contains a request from the Editor that we would furnish him with “directions for cooking okra soup, as practised by the people of the South.” With this request we have complied by letter, from which we make the following extract. We have seldom met with this most excellent soup out of the vicinity of Charleston, and we believe a knowledge of the proper mode of cooking, will render it a favourite wherever it can be cultivated. We strongly recommend it, as being most excellent and nutritious:

“They (the pods) are of proper size when two or three inches long, but may be used as long as they remain tender, which is judged of by their brittleness—if good (that is fit for use) they will snap asunder at the ends, but if they merely bend, they are too old, have become woody and must be rejected, for a few of such pods will spoil a dish of soup. I will now proceed to give you directions for making the the soup. I have taken definite quantities, so that the proper portions of each may be clearly understood by you, smaller quantities may be used, but the proportions ought to be observed, as well as the length of time for boiling.

“Take one peck of okra pods, which must be very tender, and of which you will judge by the rule already given, cut them across into very thin slices, not exceeding $\frac{1}{2}$ of an inch in thickness, but as much thinner as possible as the operations is accelerated by their thinness. To this quantity of okra add about one-third of a peck of tomatoes which are first peeled and cut into pieces. This quantity can be either increased or diminished, as may suit the taste of those for whom it is intended. A coarse piece of beef (a shin is generally made use of) is placed into a digester with about two and a half gallons of water, and a very small quantity of salt. It is permitted to boil for a few moments, when the scum is taken off and the okra and tomatoes thrown in. These are all the ingredients absolutely necessary and the soup made is remarkably fine, we, however, usually add some corn, cut off from the tender roasting ears, (the grains from three ears will be enough for the above quantity)—we sometimes add about a half pint of

Lima or Civic beans—both of these improve the soup, but not so much as to make them indispensable, so far from it that few, add them. The most material thing to be attended to is the boiling and the excellency of the soup depends almost entirely on this being faithfully done, for if it be not enough, however well the ingredients may have been selected, the soup will be very inferior and give little idea of the delightful flavour it possesses, when properly done. I have already directed that the ingredients be placed in a digester. This is decidedly the best vessel for boiling this or any other soup in, but should there be no digester, then an earthenware pot should be preferred, but on no account make use of an iron one, as it would turn the whole soup perfectly black. The proper colour being green, coloured with the rich yellow of the tomatoes. The time which is usually occupied in boiling okra soup, is *five hours*—we put it on at 9 A. M. and take it off about 2 P. M. during the whole of which time it is kept briskly boiling, the cook at the same time stirring it frequently and mashing the different ingredients. By the time it is taken off it will be reduced to about one-half; but as on the operation of the boiling being well and faithfully executed depends its goodness, (as I have already remarked) I will state the criterion by which this is judged of. The meat separates entirely from the bone, being 'done to rags,' the whole appears as one homogeneous mass in which none of the ingredients are seen distinct—the object of this long boiling being thus to incorporate them—its consistency should be about that of thick porridge."

Cocoons—Extract of a letter from G. B. Smith, Esq. of Baltimore, Editor of the American Farmer, to the Editor of the Southern Agriculturist.—"As to the sale of Cocoons, I am even yet unable to say positively when and to whom they can be sent for sale. As soon as I can get a definite arrangement made, I shall give notice by advertisement in the Farmer. The Cocoons should be well assorted, all imperfect ones, and those which the crystal has perforated, should be thrown out. They should be put into barrels or boxes, to prevent their being crushed, and to preserve their shape; if they are pressed they are ruined for reeling. Let the barrel or box be filled full and shook down, so that there will be no room left unoccupied; but they must not be pressed. In this way they can be transported by land or sea. It would be well to put a few cloves in each box to prevent mildew and the effects of sea dampness."

Caterpillars.—Mr. Editor,—Among the many remedies applied to fruit trees for protecting them from the ravages of the caterpillar and other insects, I have never tried any with more success than strong soap suds, which has been frequently recommended, particularly in your paper. Early last spring I observed an uncommon indication of insects, more particularly on apple trees: the first which made their appearance were small green lice, accompanied by the black ant, which completely covered the buds of apple trees as they were putting out buds for blossoms and leaves. They were soon followed by the caterpillar, whose combined efforts I had great reason to expect would at least destroy all the fruit, if not the trees. I immediately on discovery applied a very strong soap suds with an old broom to the bodies and limbs of the choicest trees; likewise sprinkled it into the tops of the trees, as faithfully as practicable. A few days after I examined them, and indeed found no insects; but the buds had the appearance of having been singed by fire. They however shortly came forward, and assumed an uncommonly healthy appearance, and have ever since been entirely free from any insect whatever.

I think it more necessary to notice the effect of soap on insects, as its being made more generally known, and within immediate reach of every farmer and horticulturist, it would not likely be neglected at the proper season. I would suggest that it be applied to the bodies and branches of trees,

early in the spring, before the eggs fastened to the bark are hatched by the heat of the sun. I have no doubt but it would, if used several times during the warm season on the bodies and about the roots of peach, cherry and plum trees, protect them from the effect of the borer and other worms which injure them.

I have applied soap suds this summer to my hills of cucumbers and melons, and have not been at all troubled with worms, and very little by the striped bug, whilst my neighbours complain bitterly of their ravages.

I am, respectfully, yours.

ALMON STEVENS.

Warsaw, Gen. Co. June 13, 1831.—*Genesee Farmer*.

One way to protect Cabbage Plants from worms.—Mr. Fessenden.—In the months of May and June, 1830, the soil in this vicinity was infested with an unusual quantity of worms of various kinds which made great havoc in gardens, corn-fields, &c. I set out on a small plat of ground nearly 200 cabbage plants which were destroyed in a few days. The same ground was set a second and a third time, but with no better success than before and although hundreds if not thousands of worms were destroyed in my cabbage yard, their number appeared to increase; having only a sufficient number of plants to set in my yard once more and it being late in the season I thought of the following expedient:—after I had taken the plants to my intended cabbage yard, I cut pieces of paper from 6 to 8 inches long and from 2 to 3 inches wide and wound or wrapped them round the stalk of the plant leaving the roots as far as the dirt was attached to them below the paper, and shaped the top or upper part of the paper that stood out of the ground in the form of a tunnel, to give room for the top or leaves of the plant; and the better to keep the paper in shape, wound some slack twisted yarn around the papers; but the paper will do well without the yarn by placing the soil snugly round it: this had the desired effect and entirely protected the whole; my crop of cabbages was abundant, and found a ready market. This plan holds good to other plants when it is practicable, and even so small fruit trees. When the cabbage had grown considerably and needed hoeing, the papers were renewed, which is done with great ease directly after a rain, or early in the morning, after a heavy dew.

Respectfully yours, &c.

ENOCH PLACE.

Strafford, N. H. May 25, 1831.—*N. E. Farmer*.

How to increase the productiveness of Trees and Plants.—Mr. Knight, in his treatise on the culture of the apple and pear, p. 83, has this passage: "In the garden culture of the apple, where trees are retained as dwarfs or espaliers the more vigorously growing kinds are often rendered unproductive by the excessive though necessary use of the pruning knife. I have always succeeded in making trees of this kind fruitful by digging them up, and replacing them with fresh mould in the same situation. The too great luxuriance of growth is checked, and a disposition to bear is brought on." The same observation was made by Mr. Lawrence. So if beans, which are but a few inches high, be transplanted, they do not become so tall, but they flower and ripen sooner. The same occurs in frequently transplanting broccoli; the plant does not grow so tall, but has earlier flowers, and in greater numbers. It is probable says Dr. Darwin, that confining the roots of the cucumbers and melons in small garden pots would stop the too luxuriant growth of the vines, and make them more fruitful, if care was taken to supply them with water more frequently, and with sufficient nutriment, by mixing with the water some of the carbonic black fluid which has drained from a manure heap.—*N. E. Farmer*.

Roses.—As this is the time of the year to select desirable roses, so also it is the proper season to commence propagating them by layers. Most kinds of roses may be increased by cuttings, or by budding and grafting; yet a

very ready way to increase them, is by layers. Where they have been budded on common stocks, it is well to lay them down and allow them to take root, as it is found that most kinds continue longer when treated in this manner, than when growing upon stocks of other varieties. Commence the operation of laying down roses, by cutting off all the spurs and short branches, and thinning the longer branches to a convenient distance; then make the ground where the shoots are to be covered, mellow and rich, remove about three inches of the top of the earth and bend down the bush intended for layers, and with small hooks secure it fast, and elevate the young shoots so that their ends may be several inches above the ground when that shall be replaced which has been removed. It is very well to make a transverse cut in the limbs at the place where they are wished to bend up, cutting the limb one half off, as the roots will be more apt to strike at that place. When all the limbs are cut and secured, with their points as nearly perpendicular as possible, let the earth be replaced and pressed moderately about the shoots, and if the weather should prove dry, let them be watered at evening, so that the ground may be kept quite moist, which will facilitate their striking roots. In autumn they should be examined and such as have formed good roots should be taken off from the old stock and transplanted, and many will flower the following summer.—*Gen. Far.*

Large Strawberries.—There were exhibited by judge Buel, at the horticultural show on Tuesday, fifty strawberries of uncommon size and beauty. On weighing them, the committee found that forty-seven berries, divested of their stems, weighed a pound—three averaging a little more than an ounce; and it is said every berry exceeded four inches in circumference. These strawberries were of the kind called Methven, or Methven Castle, from the place where the variety originated, and are of the colour and flavour of the common field variety. They were gathered from plants put out in August last, the runners of which had not been clipped.

There were also exhibited at the same time, from the Albany nursery, more than 100 varieties of hardy roses, 7 varieties of honeysuckle (*Lonicera*) 6 of the pink (*Dianthus*), Chinese peonies, dahlias, and more than 40 varieties of choice border flowers.

We were presented, by judge Buel, with two bowls of the Methven strawberry, most of which measured four inches in circumference, and of a rich flavour.—*Alb. Arg.*

Drooping Flowers.—Mrs. M. of the Arcade, informed us a few days since that she had tried the experiment of putting hot water into her flower pots to resuscitate the drooping flowers—which succeeded beyond her most sanguine expectations; and that flowers which had become wilted, revived and were quite fresh for twenty-four hours after. This is well worth the attention of the ladies, as to arrange a flower pot with taste, requires some little time; and if by the application of hot water, their beauty can be continued for one or two days in addition to their usual time of duration, it is quite desirable. Few people but what are fond of the exhibition of flowers, either for the decoration of a room or table, and the luxury is a cheap and harmless one; one which is calculated to call forth reflections the most exalted, pleasing and instructive, when we meditate upon the power and goodness of Him who made them such.—*Genesee Farmer.*

Simple means of purifying water.—It is not so generally known as it ought to be, that pounded alum possesses the property of purifying water. A large table spoonful of pulverised alum, sprinkled into a hogshead of water, (the water stirred round at the time) will after the lapse of a few hours, by precipitating to the bottom the impure particles to purify it, that it will be found to possess nearly all the freshness and clearness of the finest spring water. A pailful containing four gallons, may be purified with a single tea spoonful.—*N. E. Farmer.*